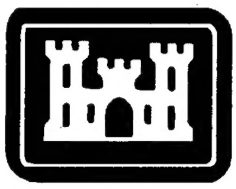


US Army Corps
of Engineers
New Orleans District

CELMN-PD-96/07

SITE TESTING AT DARROW (16AN54), MARCHAND TO DARROW LEVEE ENLARGEMENT AND CONCRETE SLOPE PAVEMENT, MISSISSIPPI RIVER LEVEES, ASCENSION PARISH, LOUISIANA.

Final Report

August 1997

EARTH SEARCH, INC.
P.O. Box 850319
New Orleans, LA 70185-0319

Prepared for

U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	1997 July	Final Report; 1996 to 1997

4. TITLE AND SUBTITLE
Site Testing at Darrow (16AN54), Marchand to Darrow Levee Enlargement and Concrete Slope Pavement, Mississippi River Levees, Ascension Parish, Louisiana.

5. FUNDING NUMBERS
DACW29-94-D-0020,
D.O. 14

6 AUTHOR(S)
Aubra Lee, Jill-Karen Yakubik, and Benjamin D. Maygarden

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Earth Search, Inc.
P.O. Box 850319
New Orleans, LA 70185-0319

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

10. SPONSORING/MONITORING ORGANIZATION REPORT NUMBER
CELMN-PD-96/07

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Unclassified. Distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

The Darrow site (16AN54), located in the community of Darrow, Ascension Parish, Louisiana, consists of the remains of a portion of the community that was destroyed by a 1932 Mississippi River levee setback. The site encompasses approximately 1.4 acres. NRHP test excavations at the Darrow site consisted of backhoe trenches and three 1 m^2 hand excavation units guided by proton magnetometer survey and historic map evidence. Excavations revealed the presence of three distinct midden deposits. The deposits represent an occupation span beginning just after the Civil War and ending just prior to the construction of the new Darrow levee in 1932. Moreover, the two nineteenth-century midden deposits seem to be functionally different based on the types of artifacts recovered from them. Also, the presence of intact features at the site was established. These included a linear brick feature and the remains of a razed chimney. Because the Darrow site possesses the quality of integrity as demonstrated by the test excavations, and because it possesses further research potential (Criterion D), it is recommended as being eligible for nomination to the NRHP. It is further recommended that data recovery be undertaken in that portion of the site to be impacted by the proposed levee enlargement and concrete slope pavement construction. This data recovery program would mitigate the adverse impacts to intact deposits located within the area to be impacted by construction.

14 SUBJECT TERMS
Darrow, Ascension Parish, service communities, Mississippi River, historical archeology, remote sensing, National Register test excavations, plantations, late-nineteenth/early-twentieth century

15. NUMBER OF PAGES
158

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

July 29, 1997

Planning Division
Environmental Analysis Branch

To the Reader:

The following report provides a discussion on the archeological assessment of site 16AN54 conducted as part of the Marchand to Darrow Levee Enlargement and Concrete Slope Pavement project, an item of the Mississippi River Levees project. Testing documented that 16AN54 demonstrates the quality of significance necessary for inclusion on the National Register of Historic Places [36CFR60.4 (a-d)], specifically under criterion "d." The Louisiana State Historic Preservation Officer concurred with this assessment by letter dated November 21, 1996.

This effort was designed, funded, and guided by the U.S. Army Corps of Engineers, New Orleans District, as part of our cultural resources management program. The report has been reviewed and accepted by the New Orleans District. We concur with the recommendations and commend the outstanding efforts and careful scholarship of the authors.

James M. Wojtala
Technical Representative

Edwin A. Lyon
Contracting Officer's
Representative

R. H. Schroeder, Jr.
Chief, Planning Division

ACKNOWLEDGMENTS

Earth Search, Inc., would like to extend their gratitude and thanks to the U.S. Army Corps of Engineers, New Orleans District, for the opportunity to conduct research at the Darrow site (16AN54). We would like to thank, in particular, Dr. Edwin A. Lyons and Mr. James M. Wojtala for their support throughout the project.

We would also like to thank the Division of Archaeology for their assistance during this project. Mr. Duke Rivet and Mr. Michael Mahaty should receive special mention for their suggestions and site visits. Their expertise was invaluable to Earth Search, Inc., during our field investigations. Dr. Thomas Eubanks, State Archaeologist, also provided much appreciated support and technical expertise during all phases of this project. Mr. Benjamin Maygarden would like to extend a special thanks to Mrs. Clotilde Graves who served as an informant for Mr. Maygarden during his research.

Dr. Jill-Karen Yakubik served as Principal Investigator. Mr. Aubra L. Lee was Project Manager for the National Register testing program, and Ms Melissa Braud was Crew Chief for that effort. Field crew, in addition to Mr. Lee and Ms. Braud, included Louise Fergusson, Garrick Rose, and Ruben Saenz II. Benjamin Maygarden served as historian for the project, while he and Rosalinda Méndez had the task of overlaying historic maps upon digital base maps. Mr. Alan R. Saltus, Jr., conducted the proton magnetometer survey and generated maps based on these data.

In the laboratory, Ms. Donna Stone, Laboratory Supervisor, was in overall charge. Laboratory Technicians included Garrick Rose, Christopher Sliwinski, and Ruben Saenz II. Ms. Amanda V. W. Perschall was in charge of all post field photography. Ms. Perschall, Rhonda Smith, and Garrick Rose were responsible for graphics included in the report. Ms. Smith was also responsible for faunal analysis, and Dr. Yakubik analyzed all other artifact classes.

TABLE OF CONTENTS

Table of Contents, continued.

Table of Contents, continued.

This Page Intentionaly
Left Blank

LIST OF FIGURES

This Page Intentionaly
Left Blank

LIST OF TABLES

CHAPTER 1
INTRODUCTION

This report describes the results of archeological test excavations at the Darrow site (16AN54) located in Ascension Parish, Louisiana (Figure 1). The site was originally identified during survey of the U.S. Army Corps of Engineers St. Elmo Revetment project area by personnel from R. Christopher Goodwin and Associates, Inc. (Hinks et al. 1994:53-67). Evidence gathered during this effort indicated that the intact portions of the site lie on the batture between the southern toe of the modern levee and the northern edge of a historic borrow area. This area is approximately 82 ft (25 m) wide. They reported that deposits extend east/west for 1148.28 ft (350 m) between levee station 2699+02.25 and 2712+00. Hinks et al. (1994:67) concluded that much of the site area has been extensively damaged by levee construction. Moreover, while no *in situ* features were identified during their field investigations, insufficient testing was conducted in order to determine if features or important deposits exist within undisturbed portions of 16AN54. Therefore, this site was considered to be potentially eligible for nomination to the National Register of Historic Places (NRHP).

In order to determine if features and/or important deposits exist within the undisturbed portions of 16AN54, Earth Search, Inc. (ESI), pursuant to Contract DACW29-94-D-0020 conducted Phase II NRHP testing at the site. The results of a proton magnetometer survey of 16AN54 combined with information from historic maps were utilized to place five backhoe trenches. Additionally, three 1 m^2 units were excavated in order to investigate possible features and/or midden deposits discovered during backhoe trench excavations. These efforts revealed the presence of three distinct midden deposits, one intact brick feature, and evidence of structure razing. The site possesses the quality of integrity and is considered to be eligible for nomination to the National Register of Historic Places under Criterion D (see Research Design, below). We recommend that archeological data recovery be undertaken at this site to mitigate the adverse impacts associated with construction of the U.S. Army Corps of Engineers Marchand to Darrow Levee Enlargement and Concrete Slope Pavement project.

Description of Project Action

The Marchand to Darrow Levee enlargement and Concrete Slope Pavement (CSP) project generally consists of placing earth fill and surfacing the levee crown to bring the levee crown up to design grade, and placing concrete slope pavement on the existing riverside levee slope. The project extends from levee station 2487+00 to station 2730+00 of the Pontchartrain Levee District, approximate river mile 181.1 to 175.4 Above Head of Pass (AHP). Also included is a borrow area located from levee stations 2553+00 to 2561+00.

The proposed levee improvements will extend for a distance of approximately 4.6 miles. Improvements will consist of placing concrete slope pavement on the riverside levee slope in non-continuous areas for approximately 2.9 miles. The levee crown will be surfaced with either 7 inches of crushed stone or crushed concrete, or 6.5 inches of calcium-sulfate hemihydrate for the length of the project. Semicompacted fill will be placed in areas where the existing levee is deficient in grade and/or section. Any levee slopes disturbed by the improvements will be fertilized, seeded, and mulched.

Placement of concrete slope pavement is recommended where natural turf cannot be maintained due to exposure to severe wave action. The conditions that create severe wave exposure are associated with levees located in areas of narrow batture with insufficient tree screen, and the presence of intensive barge tow and ocean-going vessels with their accompanying vessel generated waves. These conditions exist on this levee project; therefore, CSP will be required on the riverside levee slope. Preparation for the CSP will include excavation of a trench 15 to 18 ft wide and 3 ft deep at the toe of the existing levee. The

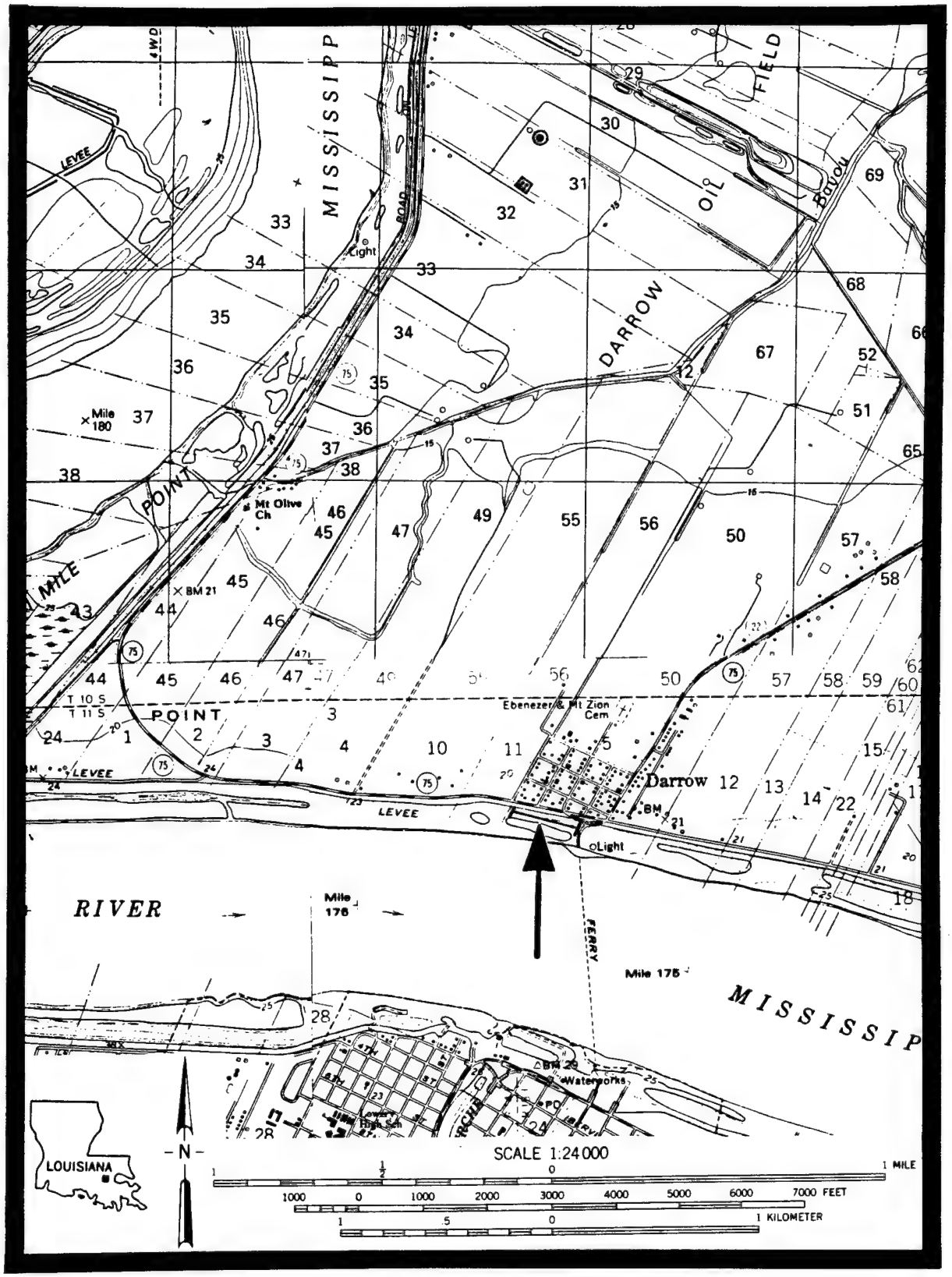


Figure 1. Excerpt from the USGS 7.5' Donaldsonville, Louisiana Quadrangle, 1962 (photorevised 1981), showing the project area.

width of the excavation trench will vary depending on the slope of the existing levee. Material from the excavation trench will be stockpiled adjacent to the riverside edge of the excavation trench. When CSP is complete, the excavation trench will be backfilled.

Report Organization

Chapter 2 presents the natural setting for the project area, while Chapter 3 provides a geomorphic overview of the site area. Chapters 4 and 5 are discussions of the prehistory and the history of the project area, respectively. Chapter 6 is a review of previous work in the vicinity of 16AN54. Chapter 7 presents the results of field investigations, while Chapter 8 presents the results of artifact analyses. Recommendations, including a research design for archeological data recovery, are presented in Chapter 9.

CHAPTER 2
PHYSICAL SETTING OF THE DARROW SITE

Introduction

The discussion below describes several aspects of the general physical setting associated with the Darrow site. Information concerning the three physiographic surfaces mapped in Ascension Parish is presented to provide a general background for more specific geological and geomorphological data provided in Chapter 3. Soil and climatological information are presented in order to provide insights into possible disturbances, either natural or cultural. Floral and faunal data are synthesized to provide a baseline to explore changes to the natural landscape, primarily by historic occupants.

Physiography

Three main physiographic surfaces have been mapped in Ascension Parish. These include the terrace uplands located in the northern and central parts of the parish, the natural levees along the Mississippi River, and the backswamps located in the southeastern portion of the parish (Figure 2). The major stream course located in the project region is the Mississippi River, flowing northwest to southeast across the parish. Other prominent stream courses in the region are Bayou Manchac, the Amite River, the Petite Amite River, and the Blind River (Spicer et al. 1976:51). Bayou LaFourche is an important Mississippi River distributary that flows south from the west bank of the river at Donaldsonville, immediately across the river from Darrow. Bayou LaFourche's wide natural levees indicate that it served as a major Mississippi course in prehistoric times. Once important distributaries on the east bank, Bayou Manchac and New River are now inactive.

The terrace uplands are a local manifestation of a regional terrace system usually labeled the Prairie Formation (Saucier 1994:173; Spicer et al. 1976:51). Sediments making up the terrace were deposited as a deltaic plain along the Mississippi River during the next to last interglacial stage of the Pleistocene Epoch. Subsequently, the terrace was tilted slightly toward the Gulf of Mexico and incised by erosion while the last glacial stage was in action and when sea level was falling. The Mississippi Valley and other river valleys entrenched at this time and formed escarpments along the margins of the uplands (Autin et al. 1991; Saucier 1994; Spicer et al. 1976). In the northwestern part of Ascension Parish, the terraces are more than 30 ft (9.14 m) above sea level. The terraces slope downward in a southeasterly direction at approximately 2 ft (0.60 m) per mile. The elevation of the terraces declines to sea level southeast of Sorrento and disappears beneath recent backswamp sediments. After the last glacial episode, sea level began to rise, causing the entrenched stream courses of the Lower Mississippi Valley to partially fill with alluvium. This process still continues and is most pronounced in areas adjacent to the Mississippi River and its distributaries, where wide natural levees have formed. Farther from the river (away from its banks), lesser amounts of alluvium have been deposited. This action has contributed to the formation of poorly drained backswamps.

The natural levees of the Mississippi River attain an elevation of more than 20 ft above mean sea level (amsl) (6.09 m) and an elevation of 25 ft amsl (7.62 m) on the west bank where the river enters the parish. The levee surfaces slope from the crests along the river downward to the backswamps at an average rate of 5 ft (1.52 m) per mile. Consequently, the soils on the levees have fair drainage and are cultivated for a width of 2 mi. (3.21 km) or more. Natural levee deposits cover almost the entire parish west of the Mississippi River. Conversely, on the east side of the river, a broad, well-developed backswamp area (Bluff Swamp) is between the natural levee and the upland terrace escarpment in the northwestern part of Ascension Parish. Bluff Swamp is bound on the north by natural levees formed by Bayou Manchac and

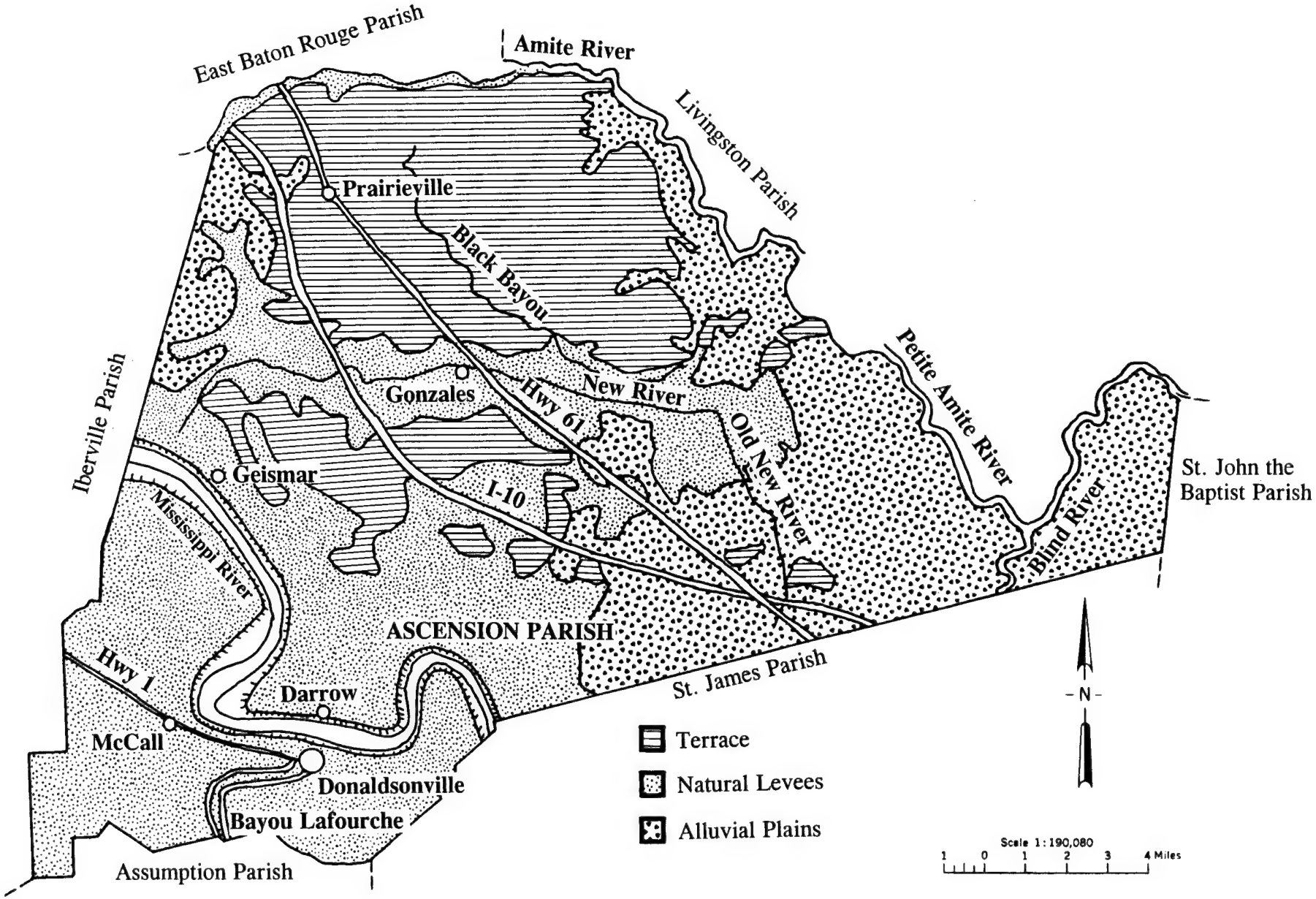


Figure 2. Major physiographic surfaces of Ascension Parish (adapted from Spicer et al. 1976).

on the south by natural levees associated with New River. Southeast of Bluff Swamp, the terrace edge is close to the natural levee, resulting in a poorly developed backswamp environment. East of Burnside, the terrace slopes downward, allowing for a better developed backswamp similar to Bluff Swamp

Soils

Spicer et al. (1976) has mapped the batture within the project area as the Convent Series soils, frequently flooded (CV). Generally, the Convent Series can be characterized as a somewhat poorly drained, moderately permeable, slightly acid entisol. These soils are formed in loamy soil found in the natural levees within the alluvial plain. More specifically, Convent Silt Loam (Cs) is usually found on the protected crests and backslopes of natural levees, while the Convent Series, frequently flooded, is restricted to the batture portion (river side) of the natural levees (Figure 3). Two narrow bands of frequently flooded Convent Series soil are located between the river and the man-made protection levees and are approximately 20 mi. (32.18 km) long. Only two soil horizons, A and C, have developed within the silty overbank deposits of the Mississippi River. The A horizon is a 10YR 4/2 (dark grayish brown) silt loam and ranges from 6 in to 16 in thickness (15.25 cm to 40.64 cm) with an average thickness of 8 in (20.32 cm). This horizon has a weakly developed subangular block structure. The A horizon directly overlies the C horizon, which is a 10YR 5/2 (grayish brown) very fine sandy loam to a depth of 40 in (101.60 cm) below ground surface. Below 40 in (101.60 cm), alternating bands of silt loam and very fine sandy loam make up the horizon. Natural fertility of the Convent Series is relatively high. In most areas, these soils have a seasonal high water table within a depth of 1.5 ft to 3 ft (0.45 m to 0.91 m) from December through April. This is also the same temporal span for frequent flooding and seasonal inundation along with scouring, deposition, and redeposition by the Mississippi River (Spicer et al. 1976).

Climate

The immediate area surrounding the Darrow site has a warm, humid, subtropical climate with a relatively high annual rainfall of 60.3 in (153 cm). Summers are hot and humid with prevailing winds from the Gulf of Mexico. During the winter season, the prevailing winds alternate between moist, mild, tropical air from the south and dry, cool, polar air from the north. Extremely cold weather seldom lasts for more than 3 to 4 days at a time (Spicer et al. 1976).

Temperatures recorded between 1941 and 1970 are indicative of the humid, subtropic climate of Ascension Parish. Temperatures range from a daily average high of 81° F and a daily average low of 58° F. The average annual highest temperature based on records taken across the river at Donaldsonville is 99° F and occurs during the months of July and August. The average annual lowest temperature is 22° F and occurs between December and February. The first frost and/or freezing temperature occurs on or near November 27 while the last freezing temperature normally occurs on or before February 23. The growing season averages 277 days (Spicer et al. 1976).

The average annual rainfall is 60.3 in (153 cm) with a monthly average of more than 4 in (10.16 cm) except during October, when the monthly average drops to 2.7 in (6.85 cm). Rainfall is sufficient for cultivation of a wide variety of crops as well as pasture plants. Rainfall generally occurs in the form of showers or thundershowers; prolonged steady rains are infrequent and occur in winter. One exception to this general rule is the excessive rain associated with hurricanes occurring between June and November. Hail occurs rarely and then only with heavy rains in the spring and fall. Extended droughts are rare as is measurable snowfall (Spicer et al. 1976).

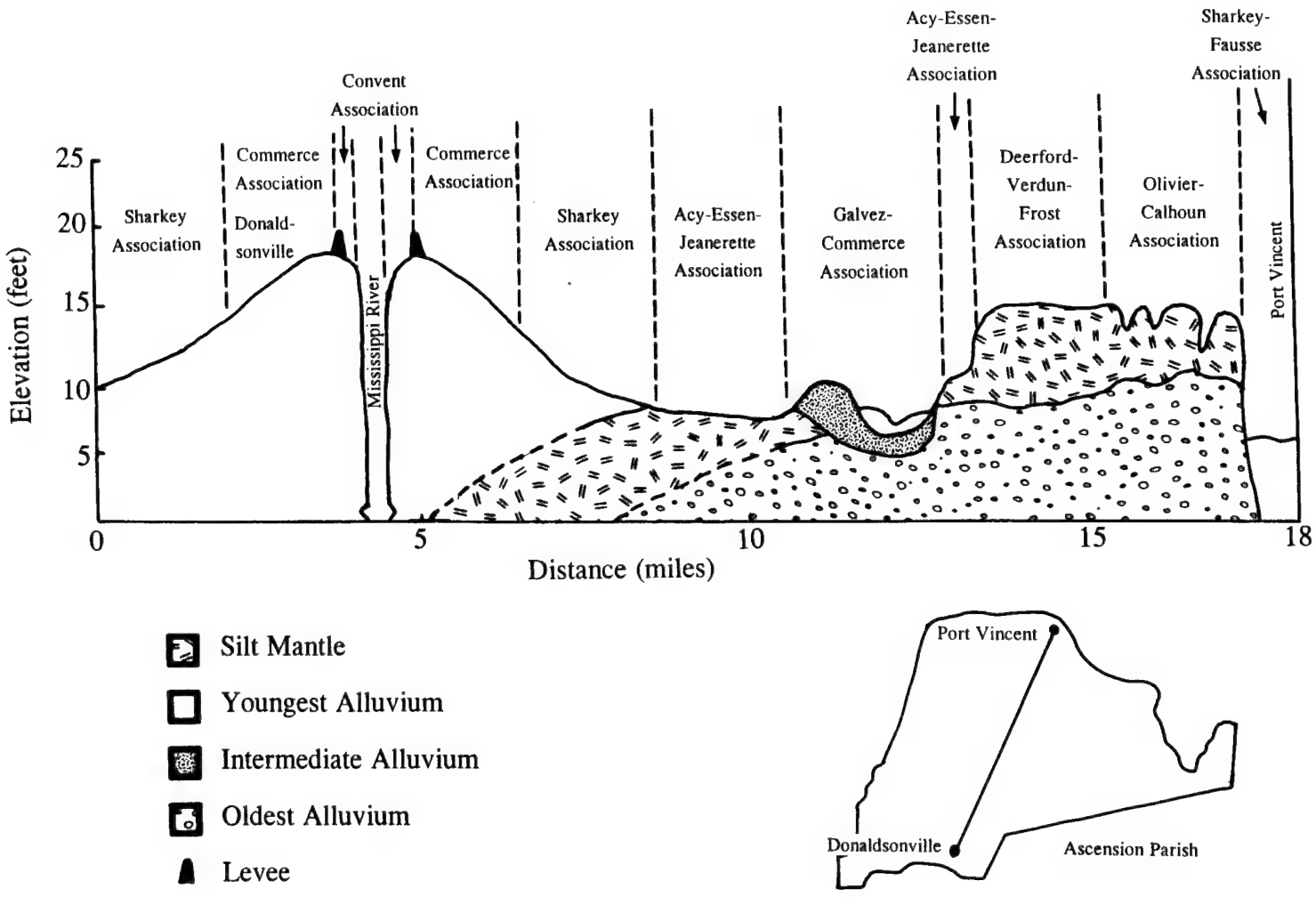


Figure 3. Relationship of the soil associations to elevation and parent material, shown by a cross-section from Donaldsonville to Port Vincent.

Flora

The regional setting associated with the Darrow site has been classified by Clair Brown (1945:8) as the "Bottomland Hardwoods and Cypress Region." This region includes the Mississippi River floodplain, the deltaic plain, and the floodplains of larger streams other than the Mississippi River. Generally, the region may be characterized as one in which hardwood vegetation and large acreages of bald cypress (*Taxodium distichum)* would be found around lakes, backwater swamps, old stream channels, natural levees, and levee slopes. Soils vary from sand to heavy, dense clays. Drainage is a salient factor in determining the upperstory mixture in this region.

Large, permanently inundated backwater swamps, commonly called cypress swamps or breaks, would have contained an upperstory of bald cypress (*Taxodium distichum)*, tupelo gum/water tupelo (*Nyssa aquatica)*, swamp red maple (*Acer rubrum*), Drummond red maple (*Acer drummondii*), water ash (*Fraxinus caroliniana*), and pumpkin ash (*Fraxinus tomentosa*). Understory vegetation would consist primarily of virginia willow (*Itea virginica*) and common buttonbush (*Cephalanyhus occidentalis*). Peripheral to the swamps were large areas of poorly drained soil, which were somewhat drier than the swamps. This area would contain an upper canopy of overcup oak (*Quercus lyrata*), bitter pecan (*Carya lecontei*), green ash (*Fraxinus pennsylvanica*), willow (*Salix* spp.), water oak (*Quercus nigra*), and hawthorns (*Crataegus* spp.). A diverse array of shrubs and bushes were found in this context and included asters (*Aster* sp.), elderberry (*Sambucus canadensis*), and several varieties of maple (*acer* sp.) (Brown 1945; Klimas 1988).

The batture (riverside portion of levee) and all other areas which were blanketed by annual floods with sands and silt contained a growth of cottonwood (*Populus deltoides*), American sycamore (*Platanus occidentalis*), redgum/sweetgum (*Liquidambar styraciflua*), black willow (*Salix nigra*), hackberry (*Celtis laevigata*), swamp privet (*Forestiera acuminata*), honey locust (*Gleditsia triacanthos*), and water locust (*Gleditsia aquatica*). The old natural levees contained an upper canopy of redgum/sweetgum (*Liquidambar styracifiua*), cherrybark oak (*Quercus pagoda*), cow oak (*Quercus prinus*), Nuttal oak (*Quercus nuttallii*), Shumard oak (*Quercus shumardii*), water oak (*Quercus nigra*), honey locust (*Gleditsia triacanthos*), American elm (*Ulmus americana*), winged elm (*Ulmus alata*), pecan (*carya illinoensis*), and common persimmon (*Diospyros virginiana*). Along the margins of old stream course and abandoned meanders of the Mississippi River, bald cypress (*T. distichum*), swamp privet (*F. acuminata*), water locust (*G. aquatica*), and water elm (*Planera aquatica*) were found. Natural levees of these old courses along with abandoned meanders which were a few feet higher in elevation would contain redgum/sweetgum (*L. styracifiua*), overcup oak (*Q. lyrata*), bitter pecan (*C. lecontei*), common persimmon (*D. virginiana*), hackberry (*C. laevigata*), and cherrybark oak (*Q. pagoda*).

Some of the higher but no less well drained portions of the floodplains are commonly called "pin oak" flats. The dominant trees in this area include willow oak (*Quercus phellos*), winged elm (*U. alata)*, Nuttall Oak (*Q. nuttallii*), cedar elm (*Ulmus crassifolia*), and green ash (*F. pennsylvanica*). South of Baton Rouge, Louisiana, in the lower part of the Mississippi River floodplain, live oak trees (*Quercus virginiana*) are conspicuous indicators of those portions of natural levees above the heights of normal floods.

Fauna

Important fur-bearing species present in the region are the beaver (*Castor canadensis*) muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), mink (*Mustella vison*), and otter (*Lutra canadensis*). Nutria (*Myocastor coypus*) are a recent introduction and were not present during the prehistoric or historic periods. Other indigenous mammals in the area include the Virginia

opossum (*Didelphis virginiana*), the eastern cottontail rabbit (*Sylvilagus floridanus),* the swamp rabbit (*Sylvilagus aquaticus*), the fox squirrel (*Scirus niger*), the gray squirrel (*Sciurus carolinensis*), the long-tailed weasel (*Mustela frenata*), the red fox (*Vulpes fulva*), the gray fox (*Urcyon cinereoargenteus*), the bobcat (*Lynx rufus*), the beaver (*Castor canadensis*), the civet cat or spotted skunk (*Spilogale putoris*), and the white-tailed deer (*Odocoileus virginianus*). Originally, wolf (*Canis rufus*), red wolf (*Canis niger*), black bear (*Euractos americanus*), and cougar/eastern panther (*Felis concolor*) were also present, though they are rare or no longer found in the area. Recently, coyotes (*Canis lantrans*) and armadillos (*Dasypus novemcinctus*) have migrated into the area from Texas and New Mexico (Lowery 1974a).

Although the Mississippi River supports various species of freshwater fish, it is relatively unproductive because of high turbidity and strong currents. Freshwater species include largemouth bass (*Micropterus salmoides*), crappie (*Promoxis annularis*), bluegill (*Lepomis macrochirus*), chain pickerel (*Esox niger*), and white bass (*Morone chrysops*). The region surrounding the Darrow site is home to numerous amphibians and reptiles. The most common amphibians include toads (Pelphatodae), true frogs (Bufonidae), and several species of salamanders (Caudata). Amphibians would be found in permanently inundated areas, temporary ponded areas (from flooding), and very moist soils. Like the amphibians, most reptilian species prefer moist or aquatic niches. Several species of poisonous and non-poisonous snakes, turtles (Testudinata and Testudinidae), tortoises (Testudininae), lizards (Lacertilia), skinks (Scincidae), and iguanas (Iguanidae) are the most commonly occurring reptiles, as is the American alligator (*Alligator mississippiensis*). Well over one hundred avian species are either permanent or transient residents of the region. Ducks, including mallards (*Anas platyrhnchos*), canvas back (*Aythya valisineria*), pintail (*Anus acuta*), black (*Anus rubripes*), gadwall (*Anas strepera*), blue and green-wing teal (*Anas crecca*), shoveler (*Anas clypeata*), and wood ducks (*Aix sponsa*) migrate annually down the Mississippi flyway during fall and winter to avoid cold northern climes. This pattern is also replicated by the Canada goose (*Branta canadensis*), the white-fronted goose (*Anser albifrons*), the snow goose (*Chen caerulescens*), and the blue goose (*Chen caerulescens*). Dove (Columbidae) and quail (*Colinus virginianus*), well known game birds, are present, but in relatively small numbers compared to their historic populations. Herons (Ardeidae), bitterns (*Botaurus lentignosus*), storks (Ciconiidae), and ibises (Threskiornithidae) are permanent or semi-permanent residents of the region as are most species of hawks (Accipitridae), owls (Strigidae), falcons (Falconidae), kites (*Ictinia mississippiensis*), vultures (Catharidae), and ospreys (*Pandion haliatus*). The bald eagle (*Haliaeetus* leucocephalus) and the golden eagle (*Aquila* chrysaetos) are rare and migrate into the region during the fall and winter months (Lowery 1974b; Peterson 1990; Spicer et al. 1976:35; Sprunt and Zim 1961).

CHAPTER 3
GEOLOGY AND GEOMORPHOLOGY

Introduction

Dynamic fluvial activity has been the dominant force, either directly or indirectly, within the Mississippi River alluvial valley. Processes associated with this activity have not only reworked the alluvial plain, but have also reshaped the biological and depositional environments located within the valley. Due to the constantly changing nature of the alluvial valley, prehistoric inhabitants of the region have had to use settlement selection strategies in order to exploit the rich natural resources of the alluvial plain. Conversely, historic and modern inhabitants have utilized artificial control structures (e.g. man-made levees) in an attempt to exploit more of the natural resources, while at the same time creating a "built environment" in which to cultivate domesticated commercial crops. As a result, numerous environmental factors which influence the distribution of archeological deposits throughout the project area need to be understood. This understanding is necessary in order to interpret the archeological record and the depositional contexts in which they are found. Therefore, this chapter identifies and briefly describes those factors which influenced the use of the project area by prehistoric and historic Americans and later altered the cultural deposits that they left behind.

Geologic History

The Mississippi River Alluvial Valley is a product of a complex series of geologic events. This alluvial valley was the result of repeated periods of fluvial entrenchment and deposition over the Pleistocene. After the last sea level low stand, during the Wisconsinan Stage about 22,500 to 18,000 radiocarbon years B.P., the Mississippi River filled the last of these entrenched valleys. It did this initially with braided streams and lastly with meandering river deposits. However, in the vicinity of the project area, only the meandering river deposits of its currently active course underlie the meander belt (Autin et al. 1991).

Late Pleistocene Epoch. It was during the Late Pleistocene Epoch, 1.8 million to 10,000 radiometric years B.P., that repeated entrenchment of the Mississippi River formed the Mississippi Alluvial Valley, in which the project area lies. Terraces along the tributaries of the Mississippi River indicate that it and its associated incised tributaries were established by at least Early Pleistocene. Over time, the Mississippi River both deepened and widened. The location of the entrenched valley has caused it to shift laterally with each period of downcutting. The Mississippi River Alluvial Valley has significantly widened with time and in most areas is as wide as it has ever been (Autin et al. 1991).

Wisconsinan Stage. During the Wisconsinan Stage, 35,000 to 10,000 radiometric years B.P., sea level fluctuated by tens of meters below modern. The lowest stand of sea level occurred between approximately 22,000 to 17,500 radiocarbon years B.P., when sea level dropped as low as 100 m below current mean sea level. This low stand of sea level caused the Mississippi River to entrench its valley at least as far north as the latitude of Baton Rouge. At this time, the floodplain consisted of extensive braidplains formed by braided streams carrying large quantities of glacial outwash (Saucier 1981; Saucier and Smith 1986; Schumm and Brakenridge 1987).

Saucier (1981) and Saucier and Smith (1986) propose that the Mississippi River Alluvial Valley was never completely swept clean of sediments during this low stand of sea level, as dramatically illustrated by Fisk (1944). Rather, it was always partially filled with a thick sequence of coarse-grained, fluvial sediments consisting mostly glacial outwash containing sand and gravel. The erosional unconformity which creates the base of the Mississippi Alluvial Valley originated not as the result of the formation of a dendritic stream network, but

instead as the result of coalesced channel scouring and lateral planation of both braided and meandering fluvial systems (Schumm and Brakenridge 1987).

Saucier's (1981) hypothesis implies that during the period from 12,000 to 7,000 radiocarbon years B.P., the Mississippi River slowly filled its alluvial valley and created a series of discrete floodplain surfaces which remained stable for periods of hundreds of years. The surface dating to approximately 12,000 radiocarbon years B.P. would lie at relatively shallow depths beneath the surface of the modern alluvial plains. At the latitude of Baton Rouge, it would lie about 25 m (82.02 ft) below the modern alluvial plain. Further south at the latitude of the project area, this surface lies at a depth of 30 m (98.42 ft) below the modern alluvial plain. Due to the fact that the top of the surface formed by these Pleistocene braided stream deposits are shallower than the 44 to 50 m (145 to 165 ft) depth of cutbank erosion, later meander belt development would have destroyed any preexisting fluvial and prehistoric archeological deposits within areas occupied by Meander Belt No. 1. Beneath the backswamp which lies west of Meander Belt No. 1 and the project area, only Late Wisconsinan braided stream deposits and Early Holocene deposits would be preserved (Saucier 1981).

Holocene Epoch. During the Holocene Epoch, the Mississippi River occupied at least five different meander belts. The currently accepted chronology of these meander belts is given by Autin et al. (1991) and Saucier (1981). Saucier (1974, 1981) and Saucier and Snead (1989) illustrate the distribution of the remaining remnants of these meander belts and their reconstructed courses.

Before 4,800 radiocarbon years B.P., the meander belts of the Mississippi lay along the western wall of the Mississippi Alluvial Valley (Saucier 1981). At this time, a poorly developed drainage network within a backswamp probably occupied the project area. By 4,800 radiocarbon years B.P., backswamp sedimentation had completely buried terminal Wisconsinan braidplains and an unnamed meander belt of the Mississippi River. Saucier (1969) possibly illustrates fragments of this unnamed meander belt adjacent to the Meander Belt No. 1 north of the project area within West Baton Rouge and Iberville Parishes (Saucier 1974, 1981).

About 4,800 radiocarbon years B.P., a channel avulsion established the present course of Mississippi River within what would become Meander Belt No. 2. The channel created by this avulsion slowly extended itself along the eastern valley wall of Mississippi Alluvial Valley. Initially, a nonmeandering channel incised its thalweg into the underlying backswamp deposits and built a low, confining levee during the next few hundred years. As discharge of its course increased, the Mississippi River deepened and widened its channel within the underlying fluvial sediments and aggraded its natural levees. Eventually, this course developed incipient meander loops as small twists and turns in its channel. When the full flow of the Mississippi River was diverted into Meander Belt No. 2, its course developed mature natural levees and meander loops. When diversions upstream created Meander Belt No. 1, the Mississippi River continued to occupy this portion of its river course (Farrell 1989).

Eventually, this segment of the Mississippi River developed mature, high, and confining natural levees. Due to the height and confinement of the natural levee, the deposition of sediments was restricted to the concave side of the meander loop. Also, the height of the levees prevented floodwaters from uniformly overflowing and submerging the entire levee. As a result, the adjacent backswamp was flooded through low area crevasses, cut by flood waters through the natural levees. With flooding occurring through crevasse rather than uniformly over the crest of the natural levee, most of the natural levee was high and dry during a typical annual flood (Farrell 1989).

Bayou Lafourche is the former trunk distributary channel of the Lafourche Delta Complex. This former trunk distributary channel once fed water and sediment of the Mississippi River into the Lafourche Delta Complex while it was an active delta complex from 4,600 to about 400 radiocarbon years B.P. Until artificially blocked in 1904, a very minor portion of the discharge of the Mississippi River continued to flow down Bayou Lafourche, particularly during flood stage (Autin et al. 1991).

Historic Development. During historic times, significant changes within the channel of the Mississippi River occurred within the vicinity of the project area, although the bankline in front of 16AN54 has been relatively stable. According to a comparison of river surveys for 1883 and 1921 with current U.S. Geological survey topographic maps, the southward lateral migration of the Mississippi River created about 100 m (330 ft) of bankline between 1883 and 1985 in the area upriver from 16AN54 (Figures 4 and 5). Conversely, the area downriver from the site has lost about 100 m of bankline in the last century.

Geomorphology

Site 16AN54 is located within "Meander Belt No. 1," the youngest of five Mississippi River meander belts dating to the Holocene (Autin et al. 1991). These meander belts consist of assemblages of related constructional landforms and deposits created while a meandering river occupies a single course (Saucier 1974:10-11). Natural levees, point bars, abandoned meander loops, and crevasses comprise these landforms.

Site 16AN54 is located on the active river course of the modern Mississippi River. This channel, which forms the southern Meander Belt No. 1, is flanked by well developed natural levees on both of its banks. The crest of the natural levees rises as much as 6 to 7 m (20 to 23 ft) above mean sea level. They are highest adjacent to channels and courses of the Mississippi River and slope gently away as far as 3 to 6 km (1.8 to 3.7 miles) from the channel margin. On the point bar side and left descending bank of this channel, the natural levees bury point bar deposits that form a narrow, discontinuous meander belt which is approximately 0.5 to 3.0 km (0.3 to 1.8 miles) wide. On the right descending bank, natural levees extend away from Meander Belt No. 1 and cover adjacent portions of the backswamp (Figure 6). The site lies on the batture, which is the slope of the natural levee that is situated between its crest and the bank of the river (Saucier 1969).

Backswamp, also called a "flood basin," comprises the Mississippi Alluvial Plain immediately west of Meander Belt No. 1. Backswamp is that part of an alluvial plain which consists of swamp, lakes, or combination of both. The backswamp consists of environments that range from infrequently flooded forested bottomlands to permanent swamps and lakes. Long and narrow natural levee systems of crevasses, called "crevasse distributaries," often extend from the main natural levee of the meander belt, a significant distance into the backswamp (Saucier 1969, 1974).

Stratigraphy

Within the study region, Meander Belt No. 1 is on the surface of a thick package of meandering river sediments (Figure 7). Adjacent to the modern channel, there are 4 to 6 m (13 to 20 ft) of natural levee deposits covering 44 to 50 m (145 to 165 ft) of point bar deposits. These point bar deposits consist of silty sands and silts that grade downward into clean sands and gravels. A similar, but somewhat thinner package of fluvial deposits comprises the point bar deposits associated with the abandoned distributary channel of the Lafourche Delta Complex. The sediments forming the natural levees are thickest immediately adjacent to the modern and abandoned channels and decrease in thickness away from it. The natural levee

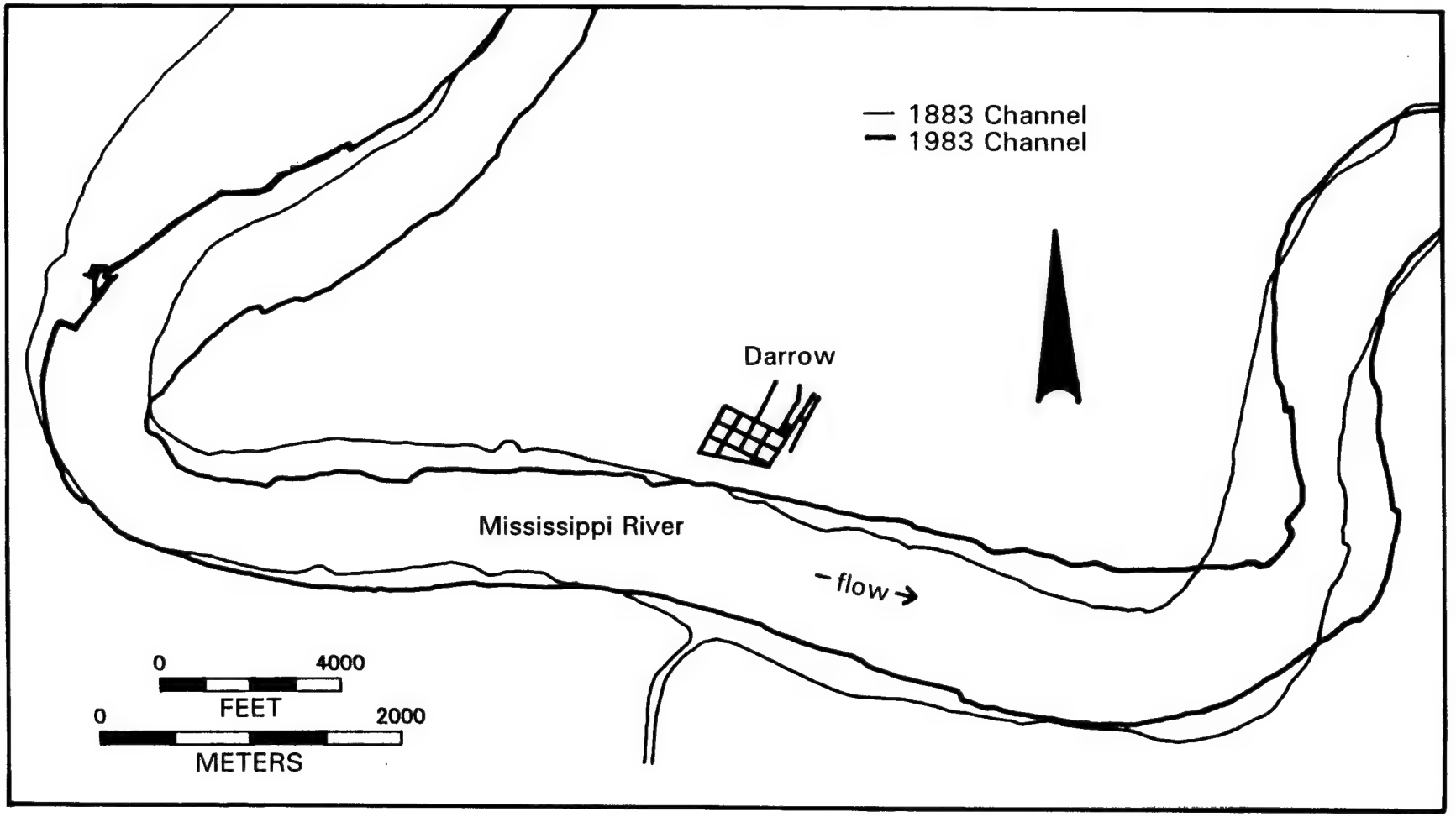


Figure 4. Comparison of the 1883 Mississippi River Commission Chart 69, and the 1983-1985 Mississippi River Hydrographic Survey, Charts 36 and 37, showing bankline changes within the study area.

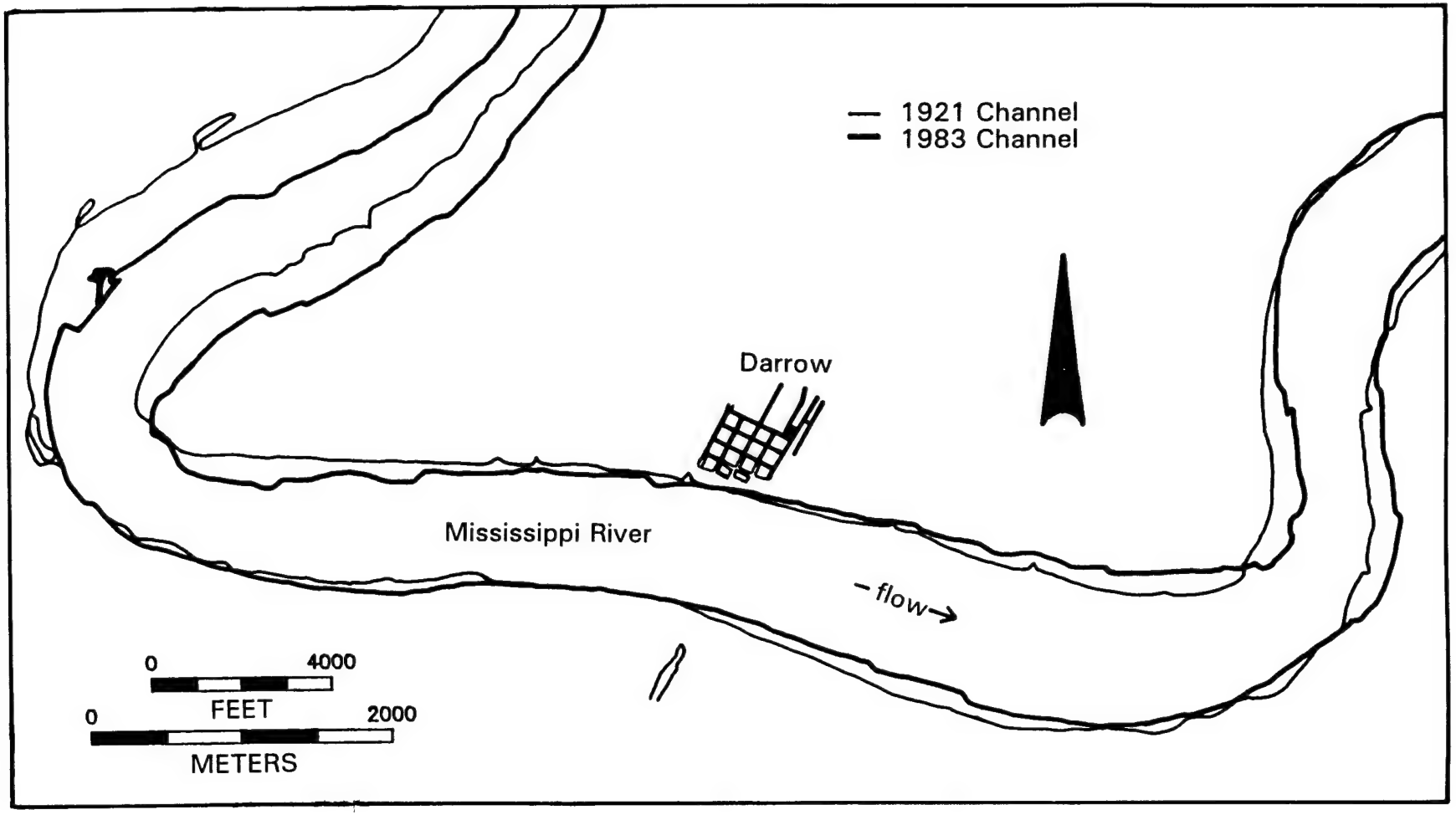


Figure 5. Comparison of the 1921 Mississippi River Commission Chart 69, and the 1983-1985 Mississippi River Hydrographic Survey, Charts 36 and 37, showing bankline changes within the study area.

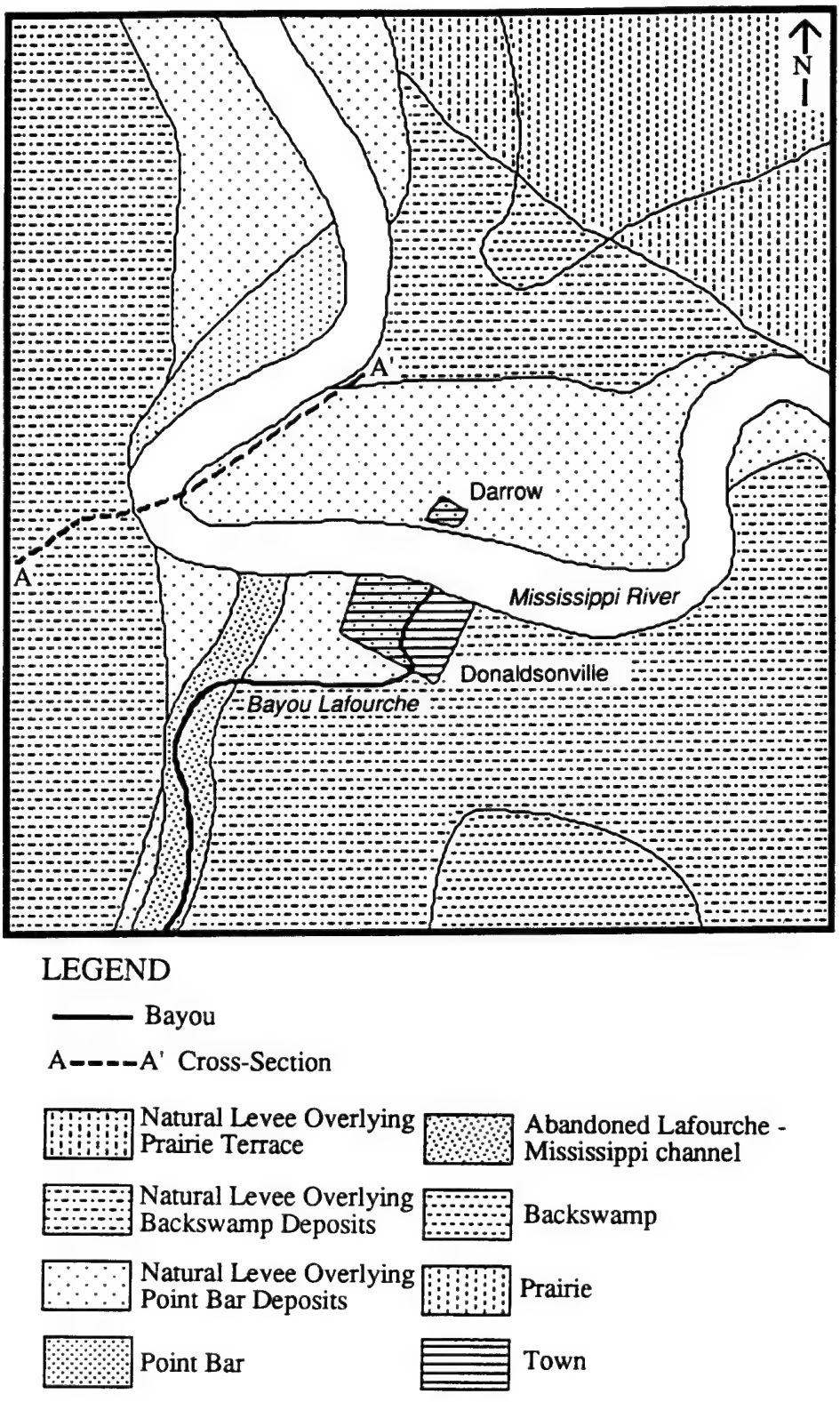


Figure 6. Geomorphic map of the vicinity of the project area (modified from Saucier 1969).

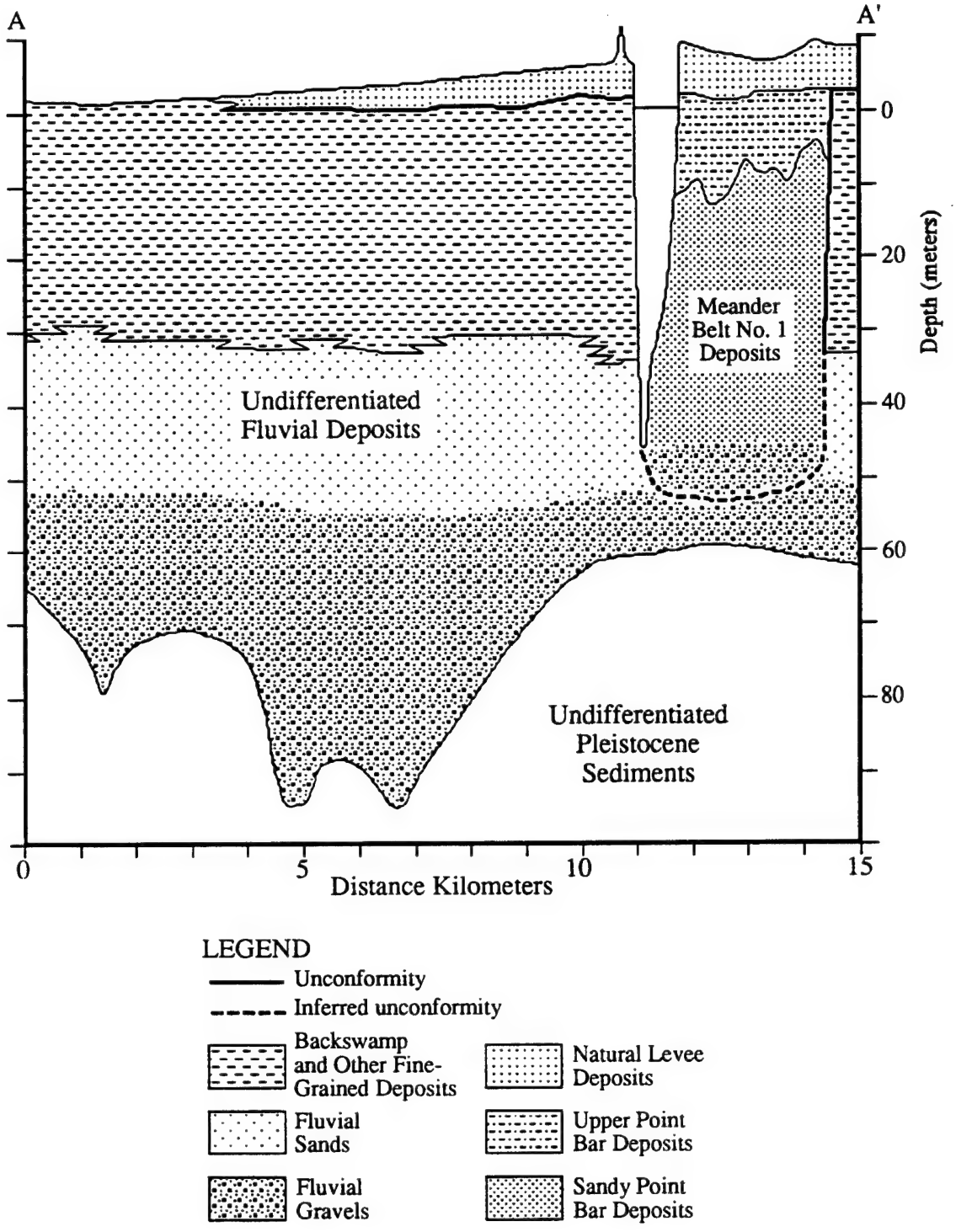


Figure 7. Geologic cross-section from the vicinity of the project area (modified from Saucier 1969).

sediments typically include stiff to very stiff, mottled brown to grayish brown, silts, silt loams, silty clays, and clays (Saucier 1969, 1974).

The backswamp located west and south of Meander Belt No. 1 is underlain by about 30 m (98 ft) of fine grained, often organically-rich sediments (Figure 7). These sediments are comprised of soft to stiff, dark to light gray clays that contain abundant wood fragments and beds of peat. The backswamp deposits bury older, Late Wisconsinan or Early Holocene fluvial deposits. These clays have been incrementally deposited by floodwaters over most of the Holocene (Saucier 1969, 1974; Saucier and Snead 1989).

Sedimentary Processes

In the vicinity of the project area, three major depositional environments can be defined on the basis of sedimentary processes. They are the river channel, channel margin, and backswamp environments. Each of these environments are dominated by distinct sedimentary processes that result in recognizable sedimentary facies.

River Channel. The course of the Mississippi River in the vicinity of the project area exhibits slow rates of lateral migration. This is due to the immaturity of this segment of Meander Belt No. 1 and the clayey backswamp sediments into which its river course is cutting. This meander belt is narrow and discontinuous because of its relative immaturity. The upward-fining, point bar sequence of fluvial sands is about 44 to 50 m (145 to 165 ft), which is directly related to the depth of the river channel at deposition. The lower part of a point bar is deposited by lateral accretion and the upper few meters accumulate by overbank sedimentation. Approximately 4 to 6 m (13 to 20 ft) of the natural levee deposits of point bar deposits overlie the upper point bar deposits (Saucier 1974; Galloway and Hobday 1983).

The lateral migration of a channel is accomplished by the active erosion of river currents on the concave bank, called the "cutbank," of a river channel. Scouring by fluvial currents at the base of a cutbank within a river channel causes it to become oversteepened. Eventually, the cutbank is oversteepened to the point that it caves into the river. When this occurs, the channel laterally shifts the cutbank and simultaneously deposits sand and silt onto the opposite convex bank, called the "point bar," of the river channel (Fisk 1947; Flores et al. 1985; Galloway and Hobday 1983).

Channel Margin. During flood stage, floodwaters containing some bedload and considerable amounts of suspended load escape the banks of an active river channel and accumulate along the margin of the channel creating natural levees. If floodwaters uniformly overflow the banks of a channel, they no longer are confined by the channel banks. The waters spread out across the floodplain, causing their velocity to abruptly decrease. The baffling effect of flood plain vegetation causes floodwaters to lose additional velocity as they leave the river channel. As a result of this rapid decrease in velocity, silt and sand suspended within these floodwaters quickly settle out of suspension and accumulate along the margin of the river channel. Only the finer suspended clay is transported by unconfined floodwaters into the backswamp of the flood basin. The silt and sand accumulate incrementally with each flood to build low, wedged-shaped ridges, called "natural levees." These levees parallel the river banks and slowly decrease in elevation away from the river (Galloway and Hobday 1983; Farrell 1989; Flores et al. 1985).

Natural levees typically consist of fine sandy loams, silts, silt loams, and silty clays. These sediments are usually thickest and coarsest adjacent to the river bank. As they move away from the river, the sediments are thin and decrease in grain size gradually until they interfinger with clay-like flood basin sediments. The sediments of older, relict natural levees of river channels typically consist of massive, often iron-stained, stiff to very stiff, mottled

brown to grayish brown, fine sandy loams, silts, silt loams, and silty clays. In the case of younger, active natural river levees and major crevasse distributary channels, these sediments may exhibit internal bedding and sedimentary structures that reflect rapid deposition by multiple, shallow flow events. The natural levees of the smaller crevasse distributaries consist of stiff gray clay containing a small percentage of silt and fine sand. They contain abundant plant roots and these are sometimes, but not always, oxidized (Galloway and Hobday 1983; Farrell 1989; Flores et al. 1985).

Except for the most immature natural levee, natural levees are subaerially exposed for long periods of time between the brief periods of high river stages when floodwaters overflow them. During subaerial exposure, natural levee sediments are compacted, oxidized, highly leached, and bioturbated by pedogenic processes and weathering. As a result, natural levees contain massive, buried weathering zones containing iron oxides, carbonate nodules, and iron oxide concretions. These characteristics reflect subaerial weathering and soil formation during periods of subaerial exposure of natural levees between flood events (Fisk 1947; Galloway and Hobday 1983).

Eventually, a natural levee aggrades to a level above the bankfull stage of a river such that it cannot be uniformly overflowed by floodwaters. In such a case, floodwaters escape the river and overflow the natural levee through local breaches within the natural levee, called "crevasses." The flow of floodwaters is concentrated within crevasses, often causing them to further cut and widen crevasses creating well-defined channels, called "crevasse channels." It is through these crevasse channels that floodwaters cross natural levees. Typically, a crevasse channel cuts through a natural levee at right angles and is dry except during flood stage. Crevasse channels provide conduits for floodwaters to transport suspended load and some bed load from the river, through the natural levee, and into the near-channel portion of the adjacent flood basin (Fisk 1947; Galloway and Hobday 1983; Farrell 1989).

Where they leave a crevasse channel, sediment-laden floodwaters decrease in velocity and, thus, deposit their load of sand and silt as a crevasse splay. A crevasse splay is a delta-like landform with a distinct triangular or elliptical plan with a radial distributary system composed of anatomizing or straight channels. Often during floods, crevasse splays act as a delta by prograding into a flood basin filled with standing water. During floods, as flow velocity of the floodwater drops, as it spreads across the splay, crevasse splays are aggraded by the accumulation of suspended and bed loads upon its surface (Galloway and Hobday 1983; Farrell 1989; Flores et al. 1985).

Backswamp. The backswamps consist of low, flat areas periodically covered or saturated with water and support a cover of woody vegetation with or without an undergrowth of shrubs. Coleman (1966) has recognized two types of backswamps, well-drained and poorly-drained. Well-drained swamps are swamps characterized by subaerially exposed, as well as saturated, land during a large part of the year. Inundation occurs primarily during periods of high flooding because of slightly higher elevations and efficient drainage channels. Poorly-drained swamps are swamps inundated more or less permanently by standing, often stagnant, water. Therefore, the reducing and oxidizing conditions that alternate during the accumulation of sediments within well-drained swamps rarely occur. Within poorly-drained swamps, primarily reducing conditions exist. The variations in the oxidizing and reducing conditions found within poorly and well-drained swamps impart a distinctive character to the sediments that define the sedimentary facies characteristic of each type of swamp. Low sedimentation rates and infrequent to frequent subaerial exposure, cause backswamp sediments to be preconsolidated by dewatering to create stiff, but highly fissured clayey deposits (Coleman 1966; Saucier 1974).

The sediments of the well drained swamp facies consist of light gray to light yellowish brown and dark brown, organically-poor clay with scattered silt lenses. Typically, these sediments are highly mixed by floraturbation and, thus, stratification is lacking or vaguely discernible. Well drained swamp deposits are typically highly fissured as a result of periodic desiccation. Faunal remains of any type are rare in well drained swamp facies as a result of the intense leaching and oxidation to which they are subjected. Well drained swamp sediments characteristically contain abundant nodules and small geodes of calcium carbonate ($CaCO_3$) and small nodules of iron oxides. Other diagenetic minerals, such as pyrite (FeS_2) and vivianite ($FeS_3[PO_4]_2 \cdot 8H_2O$), are very rare (Coleman 1966; Krinitzsky and Smith 1969).

Poorly drained swamp facies consist of very organically-rich, black to bluish gray clays with occasional laminations of silt, common laminations of compressed plant remains, and often large fragments of wood. Compressed leaves, twigs, and seeds comprise the organic laminations. Thin beds of woody peat often are also intercalated within the clays. Faunal remains present within poorly drained swamp sediments consist primarily of pulmonate and fresh-water gastropods. Typically, floraturbation has thoroughly mixed these sediments and, thus, these sediments are commonly massive. Pyrite (FeS_2) and vivianite ($FeS_3[PO_4]_2 \cdot 8H_2O$) are the characteristic diagenetic minerals present within poorly drained swamp sediments. Due to full saturation, anaerobic micro-organisms remove oxygen from these sediments causing a deficiency of oxygen within them. As a result, iron and manganese are reduced into soluble forms and bluish, greenish, and grayish sediments called "gleys" are formed (Coleman 1966; Krinitzsky and Smith 1969).

Geoarcheology

Fluvial processes and the sediments and surfaces that they have created strongly influence the formation, preservation, and the occurrence of archeological deposits. First, differences in the soil moisture, surface drainage, availability of nature resources, proximity to transportation routes, and hazards posed by flood and cut bank erosion between landforms and surfaces greatly affected how each was utilized by prehistoric inhabitants. In addition, the silty and sandy soils present on natural levees of Mississippi Rivers are ideal for agriculture (Guccione et al. 1988; Spicer et al. 1976).

Second, the environment of deposition directly relates to the preservation of archeological deposits. The vertical accretion of sediments that aggrades natural levees and fills backswamp and abandoned channels preserves the archeological deposits within these environments. However, either the continually wet, swampy, or poorly drained nature of the backswamp and channel environments discourage the accumulation of most archeological deposits within them. Because the lateral accretion of point bar deposits occurs mostly within the river channel, they lack *in situ* archeological deposits, except for sites like historic shipwrecks (Heinrich 1991a, 1991b).

Third, the active lateral migration of the Mississippi River significantly affects the preservation of archeological deposits which predate the abandonment of an abandoned river channel or course segment within a meander belt. While active, a typical Mississippi River channel rapidly migrates back and forth across its meander belt. As the Mississippi River migrates, its cutbanks consume the fluvial deposits and any enclosed archeological deposits that form the upper 44 to 50 m (145 to 165 ft) of the Mississippi Alluvial Valley. As a result, meandering of an active river channel will destroy all of the archeological deposits that predate the formation of a meander belt and many of the archeological deposits contemporaneous with it. However, it is possible sunken ships which have an intact and solid hull can survive cutbank erosion (Heinrich 1991a, 1991b).

Finally, an active meander belt will bury the contemporaneous archeological deposits not destroyed by lateral migration. An active channel would rapidly migrate away from and bury any archeological deposits that would have formed adjacent to an active point bar. In addition, an active, laterally migrating channel would consume any sites located on or present within the natural levee on its cutbank. If a Mississippi River cutbank was to migrate up to and stop at a preexisting site, that site would be buried beneath natural levee deposits. As a result, only those archeological deposits that date to a few tens of years prior to and postdate the abandonment of the channel will occur as surface sites. Therefore, the active lateral migration of a Mississippi River channel will either bury or destroy those archeological deposits which predate the abandonment of a river channel or course segment on its natural levee (Heinrich 1991a, 1991b).

This Page Intentionaly
Left Blank

CHAPTER 4
ABORIGINAL OCCUPATIONS IN SOUTHEASTERN LOUISIANA

The Poverty Point Period

Few sites dated to the Paleo-Indian or Archaic Periods have been reported in southeastern Louisiana. Although land formation was occurring during the Archaic Period (Chapter 3), sites are probably either deeply buried or in some cases reworked by riverine activity.

The name "Poverty Point" is derived from the type site (16WC5), an area of massive earthwork construction in northeastern Louisiana. This site is believed to have been a cultural center with trade networks and influence extending throughout the Lower Mississippi Valley. Baked clay balls known as "Poverty Point objects" are one of the important traits that mark the period. Other traits include an elaborate lapidary and microlithic industry, use of steatite vessels, and the use of exotic stone.

The Tchula Period

Tchula period occupations in the Lower Mississippi Valley are associated with the Tchefuncte culture. The period has been called "the early ceramic period" because, with the exception of fiber-tempered pottery, it was the interval during which initial pottery complexes appeared in the Lower Mississippi Valley. Sites are few and scattered, and there are no universal markers. However, within subareas such as South Louisiana, regional markers, primarily Tchefuncte type ceramics, have been identified (Phillips 1970:7, 8, 15, 76).

Peoples of the Tchefuncte culture were the first to engage extensively in the manufacture of ceramics. Fiber-tempered and some grog-tempered or temperless sherds have been recovered from earlier Poverty Point contexts. These may represent primarily trade goods from the earliest pottery-making cultures to the east. The basic Tchefuncte ware is temperless or grog-tempered, with accidental inclusions of small quantities of sand and vegetable fiber. Sand-tempered wares represent a minority constituent of Tchefuncte site assemblages (Shenkel 1984:47-48).

The Marksville Period

The Marksville period is associated with a Hopewellian culture and tradition manifested throughout the Lower Mississippi Valley (Phillips 1970:7, 17-18, 886). The Hopewell culture's two major centers of development were in Ohio and Illinois, and date to between 200 B.C. and A.D. 400. Diffusion of aspects of the culture may have resulted from the activity of traders who established a wide-ranging network, sometimes termed the "Hopewellian Interaction Sphere" (Caldwell 1964).

In addition to diagnostic pottery types of the Marksville period, conical burial mounds were characteristic of the culture. Interments are generally associated with grave goods. Some of these were manufactured from exotic raw materials (Neuman 1984:142-168).

The Baytown Period

The Baytown period has been defined as the interval between the end of Hopewellian/Marksville culture and the emergence of Coles Creek culture. In the southern half of the Lower Mississippi Valley, there are no area-wide horizon or period markers (Phillips 1970:901).

The Baytown period is sometimes referred to as the "Troyville period" by archeologists in Louisiana. It is often assimilated with the subsequent Coles Creek period because of the lack of diagnostic markers for the period in southeastern Louisiana. The two are together referred to and discussed as "Troyville/Coles Creek cultures" (e.g. Neuman 1984).

The Coles Creek Period

The Coles Creek period is the interval that begins with the emergence of Coles Creek culture in the southern part of the Lower Mississippi Valley and ends with the establishment of "full-blown" Mississippian culture in the northern part of the Valley (Phillips 1970:18). Although it appears to represent a population zenith in the eastern delta province, many sites tentatively classified as Coles Creek may actually be from the Baytown period (Wiseman et al. 1979:3/5).

Coles Creek culture is characterized by small ceremonial centers with mounds. These are surrounded by villages of varying size. The culture developed in the area between the mouth of the Red River and the southern part of the Yazoo Basin. Its influence filtered into the delta region of southeastern Louisiana (Brown 1984:95).

Mounds associated with the Coles Creek culture generally are larger and exhibit more construction stages than those associated with the earlier Marksville culture. A more significant difference is that Coles Creek mounds are pyramidal and flat-topped, and they were used as substructures for religious and/or civic buildings (Neuman 1984:167).

The Mississippi Period

The beginning of the Mississippi period is marked by the emergence of Mississippian culture in the northern part of the Lower Mississippi Valley and Plaquemine culture in the southern part (Phillips 1970:18-19). The Plaquemine culture itself is sometimes considered to be the classic development of temple mound construction in the lower portion of the Lower Mississippi Valley. However, archeological excavations suggest that it actually represents the culmination of developments of the preceding Coles Creek culture. Multi-mound construction and artifact assemblages are evidence that link the two. Absence of European trade goods indicates that the Plaquemine culture reached its zenith prior to contact (Neuman 1984:258-259). Sites dated to the period of contact represent a Delta-Natchezan phase. Proportions of ceramic types change, some new styles and types appear, and European trade goods are often found in association with the aboriginal materials (Quimby 1957:118-119, 134-144).

Aboriginal Occupation during the Colonial Period

Identities and locations of Indian tribes in Louisiana cannot be determined for any period prior to about 1700, when literate French settlers and visitors began to record their observations regarding aboriginal occupants of the area. Despite these accounts, it remains difficult to sort pre- and post-contact culture traits. This is especially true for the lesser tribes living along the Mississippi River and other areas within southeastern Louisiana (Kniffen et al. 1987:45).

The protohistoric and early historic periods were traumatic for aboriginal society in southeastern Louisiana. The effects of disease and of the ever-increasing European population are reflected in the declining aboriginal population and in the migrations by remnants of various tribes. Internecine warfare typified relations between the various groups (Giardino 1984).

CHAPTER 5
HISTORIC OVERVIEW

The project study area is completely encompassed by Ascension Parish. Ascension Parish was inhabited at the beginning of the historic period by the Chitimacha, who numbered approximately 2,600 persons. The Chitimacha had an unfortunate history during the French colonial period. In 1706, they were attacked by the Taensa, who had moved to the area above Ascension Parish. A number of the Chitimacha were enslaved or killed. Further problems befell the Chitimacha in the autumn of 1706, when a Chitimacha war party killed a French missionary. The French mounted a punitive expedition, triggering a war that lasted twelve years. The Chitimacha got the worst of the conflict, and many were enslaved by the French and their native allies. The Chitimacha sued for peace in 1718, and by 1758, only about 80 warriors and their families remained of the tribe. Their numbers had dwindled further by 1800 (Maygarden et al. 1994a:28). On the left or east side of the river, the Houma established a village near Burnside in the 1720s. The Houma were resident in Ascension Parish when European settlers began to arrive in significant numbers in the second half of the eighteenth century (Goins and Caldwell 1995:18).

The parish of Ascension was established prior to 1769, when the Spanish assumed control of the Louisiana colony. Some of the approximately 850 Acadian refugees who arrived in Louisiana in 1765 and 1766 settled in Ascension Parish, which became known as the "Second Acadian Coast." This was in contrast to St. James Parish, the "First Acadian Coast." Settlement on the Acadian coasts was based on smaller tracts than had been granted further down river. Through the end of the eighteenth century, the Acadian coasts remained an area of smaller tracts and fewer slaves than was typical of the lands closer to New Orleans (Maygarden et al. 1994a:28).

In 1805, the Legislative Council of the Territory of Orleans determined that St. James and Ascension parishes be combined into the county of Acadia. The county was divided into St. James Parish and Ascension Parish in 1845. Donaldsonville, the parish seat of Ascension, was the location of the village of Ascension in the eighteenth century, and was incorporated in 1813. In 1825, Donaldsonville was named the seat of the Louisiana State government, but the legislature only convened there for a partial session in 1830 (Maygarden et al. 1994a:30-31).

By the 1820s, Ascension Parish was integrated into the commercial sugar-growing economy of southern Louisiana. Many smaller landowners were displaced from the area by planters with more capital. These planters could consolidate larger tracts. Moreover, they were able to invest in the equipment, machinery, and slave work force required for commercial sugar agriculture. By the early 1840s, the majority of the project study area was held by sugar planters, who had consolidated smaller claims into large-scale sugar plantations. Many of the newer arrivals in the region were Americans from outside Louisiana (Maygarden et al. 1994a:34).

The antebellum period was one of growth for Ascension Parish. From a population of 2,219 persons in 1810, the parish had reached 5,426 inhabitants by 1830. By 1840, Donaldsonville had 1,000 inhabitants. On the eve of the Civil War, 11,484 persons lived in Ascension Parish. Ascension Parish concentrated heavily on commercial monoculture, and by 1810, over 50% of the parish population was enslaved African-Americans. This proportion of slave to free population continued for the remainder of the antebellum period (Goins and Caldwell 1995:55).

Sugar growing was potentially very profitable, and Ascension Parish was included in the area that became known as the "Golden Coast" in the antebellum period because of the relative opulence of its plantation society. However, romantic antebellum plantation myths

have obscured the risk involved in the heavy capitalization required. Ascension Parish, like the rest of the sugar-growing parishes, had a degree of fluidity in land tenure. Planters defaulted on loans for slaves, land, and machinery, and lost property to seizure and sale. Some went bankrupt altogether. Finally, the Civil War was a disaster for the Louisiana sugar plantations, even if they avoided physical destruction. More specifically, Donaldsonville was partially destroyed by Federal forces in the Spring of 1862. Military action occurred again at Donaldsonville in 1863, when Confederate forces besieged Fort Butler, built at the mouth of Bayou Lafourche in late 1862. After 1863, most of Ascension Parish was spared large-scale military action (Maygarden et al. 1994a:38-39).

The effects of the Civil War were disastrous for the dominant sugar economy of southern Louisiana and Ascension Parish. Capital losses for the sugar planters were vast, with the emancipation of slaves, the destruction of sugar houses and equipment, and the damaging of levees. There was a substantial turnover of ownership of plantation tracts. In some cases, plantations were subdivided and sold. In other cases, planters consolidated tracts into larger plantations. The east bank of Ascension Parish was no exception to this general pattern with its share of foreclosures and sales. In some parts of the Louisiana sugar region, immediate post-war problems were solved by the conversion of sugar plantations to rice cultivation, which was a less-intensive form of commercial agriculture. Eventually, wage-labor systems evolved to alleviate the labor problems facing sugar growers, and the emergence of the central factory system made it unnecessary for smaller planters to invest in sugar processing machinery and equipment (Maygarden et al. 1994a:39).

Ascension Parish planters largely continued to grow sugar in the decades following the Civil War, and there is no documentation indicating that rice was grown to any great extent. The Reconstruction era was a period not only of economic difficulties, but also of great social and political tensions. Civil authority was weak in Ascension Parish, and disturbances broke out on several occasions in Donaldsonville (Maygarden et al. 1994a:44).

Despite the Reconstruction-era instability in Ascension Parish, the overall parish population grew from 11,577 persons in 1870 to 16,895 individuals a decade later. Throughout the remainder of the nineteenth century, population continued to increase, reaching 24,142 persons by 1900. However, the Ascension Parish population declined by a total of 30% between 1900 and 1930. This phenomenon was shared by the other sugar-producing parishes in the first three decades of the twentieth century. The sugar-producing area of Louisiana experienced an overall population decline of one-sixth in this period. This was due to a series of developments in the economy of sugar agriculture. Among these developments was the impact of mosaic disease upon sugar cane, which played havoc with production until the advent of resistant varieties of cane (Maygarden et al. 1994a:44). Population migration to urban areas, particularly by African-Americans, was a major factor in this population decline (Goins and Caldwell 1995:53, 56).

Demographics within Ascension Parish were also affected greatly by the construction of two railways across the east bank of the Parish between 1880 and 1915, the Yazoo & Mississippi Valley Rail Road (later the Illinois Central) and the Louisiana Railway & Navigation Rail Road (later the Louisiana & Arkansas). These railroads did much to shift the growth of population from the river to the interior of the parish. This trend much accelerated by construction of east-west highways, Airline Highway and Interstate 10, later in the twentieth century.

After 1945, technological innovations in the cultivation and harvesting of sugar cane largely eliminated the traditional gang labor methods, and concentrated dwelling patterns, of laborers that had characterized sugar plantations since the Civil War. Up to World War II, more than three-quarters of the cane acreage in Louisiana was tended and harvested by resi-

dent laborers, who were preferred to sharecroppers. The mechanization of sugar harvesting after the 1940s played the major part in reducing the demand for labor on sugar plantations. While large numbers of laborers were still required for sugar cultivation and harvesting, it was usual for plantation workers to live in quarters complexes. Churches, stores, schools, and other amenities that would have served the plantation workers were located in small nearby communities. Seasonal workers on the plantations and others also lived in these communities (Maygarden et al. 1994a). The town of Darrow, besides being a transportation nexus, also served as this sort of regional center for the plantation and farm communities nearby.

Ascension Parish has remained a sugar-growing area in the post World-War II era, producing about 4% of Louisiana's annual sugar crop in the late 1980s. The parish's agricultural base has diversified in recent decades, but Ascension produces only about 1% of total annual Louisiana agricultural production. More dramatically, the chemical, aluminum, and fertilizer industries have established over a dozen major production facilities in Ascension Parish since World War II, transforming the once strictly agricultural economy of the area (Maygarden et al. 1994a:49). These large plants have contributed to Ascension's high ranking for value added by manufacturing. In the late 1980s, Ascension Parish ranked fifth in the state for value added by manufacturing, placing it ahead of Orleans Parish (Goins and Caldwell 1995:87).

Land Tenure in the Darrow Area During the Colonial Period

The town of Darrow is virtually coterminous with T11S R2E, Section 5. Land tenure in this vicinity prior to the Spanish colonial period is unknown, but there is little to suggest that European settlement had occurred to any degree in the area before the 1770s. There is some confusion in the Ascension Parish records concerning the original United States claimants to T11S R2E, Section 5. U.S. township plats in the Ascension Parish conveyance office dated 1851 and 1873 agree as to the numbering of sections and their respective original U.S. claimants. However, another plat, dated 1844, shows different section numbers and original claimants for T11S R2E and T10S R2E. The 1844 plat section boundaries in T10S R2E do not correspond at all with those depicted in the 1851 and 1873 plats; some eight sections seem to have been redrawn and five others eliminated. Obviously, one set of plats or the other is likely to be wrong. In any case, the original U.S. claimants of Section 5 are only a lead in determining who inhabited the section prior to 1803. The original U.S. claimants of Section 5 are listed on the 1851 and 1873 plat maps as Isidore Leblanc, J. Blanchard, and J. Landry, and on the 1844 plat map as Isidore Blanchard.

An examination of material concerning the Acadian settlers in Ascension Parish could not provide information on a claimant named Isidore Leblanc. It is likely that this is a mistake for Isaac Leblanc, a prominent member of the Acadian community in Ascension Parish during the Spanish regime who held a tract in the vicinity of Darrow (Marchand 1965:71). Isaac Leblanc was born in Acadie in 1746, first settled in Louisiana at St. James, and he received a five-arpent front grant in Ascension between 1770 and 1777, during the administration of Governor Unzaga. At his death on June 21, 1794, Isaac Leblanc held a tract of 8 arpents front on the Mississippi, which was the approximate frontage of the portion of Section 5 encompassed by the streets of Darrow. Leblanc was also *major-domo* (warden) of Ascension Catholic Church, and held the rank of second lieutenant (*alférez*) in the militia (Marchand 1965:70-71; Behrman 1986:84-85; Arsenault 1988:2541).

Studies of Acadian settlement patterns in St. James, Ascension, and the Attakapas region have indicated that the refugees made efforts to locate themselves among relatives (Voorhies 1983:84-86). Family settlement surrounding the Isaac Leblanc tract is consistent with this pattern, and further supports the identification of the Darrow area as the location of the Leblanc tract. In 1788, Isaac Leblanc's downriver neighbor was Charles Melançon,

brother of Isaac's first wife, Marie Melançon. His second wife was Marguerite Babin, whom he married in 1781 (Marchand 1965:70-71; Behrman 1986:54-55, 84-85; Arsenault 1988:2425, 2541).

Isaac Leblanc died in 1794. Joseph Leblanc purchased Isaac Leblanc's 8-arpent tract at the public sale of the succession. This Joseph Leblanc was probably Isaac Leblanc's son, but may have been his brother, and is very probably the J. Leblanc who was among the original U.S. claimants to Section 5. Joseph Leblanc married Anne Marthe Blanchard, the sister of Pierre-Isidore Blanchard. Pierre-Isidore Blanchard was the original U.S. claimant of Section 11, immediately upriver from Section 5. He was also the upriver neighbor of Isaac Leblanc at his death in 1794. Isaac Leblanc's daughter, Marie Leblanc, married this same Pierre-Isidore Blanchard (Marchand 1965:70-71; Behrman 1986:54-55, 84-85; Arsenault 1988:2425, 2541).

The downriver neighbor of Isaac Leblanc in 1794 was Joseph Landry, *dit* Chinoux. Joseph Landry was probably a relation of Felicité Landry Melançon, wife of Isaac Leblanc's upriver neighbor in 1788, Charles Melançon, and sister-in-law of Isaac Leblanc's first wife (Marchand 1965:70-71; Behrman 1986:54-55, 84-85; Arsenault 1988:2425, 2541).

Available evidence suggests that most or all of the portion of Section 5 currently bounded by the streets of Darrow was originally held by Isaac Leblanc, and after 1794 by Joseph Leblanc, who was probably Isaac's son (or possibly his brother). The remainder of Section 5, approximately three arpents front, was probably held by Charles Melançon, and by 1794 had been acquired by Joseph Landry *dit* Chinoux. Conveyance documents, discussed below, support the identification of Pierre Isidore Blanchard, the upriver neighbor of Isaac Leblanc, as the original claimant of Section 11, and of Jean Terriot as the original claimant of Section 12, thereby supporting the identification of the upper eight arpents of Section 5 as the Isaac Leblanc tract. However, as noted, the township plat maps of 1844, 1851, and 1873 are in disagreement as to the actual location of section lines, the designation of sections by numbers, and the names of original claimants. Unfortunately, these documentary source problems make it difficult if not impossible to definitively confirm the boundaries of the Isaac Leblanc tract.

An inventory of Leblanc's property was made for his succession after his death in 1794. The tract was described as 8 arpents front by the usual depth of 40 arpents. The principal dwelling house was evidently of *poteaux sur sole* (post on sill) construction, according to Marchand's translation (Marchand 1965). The house measured 30 *pied* (32') in length and 16 *pied* (17") in width, with galleries front and back measuring 7 *pied* (7½') in width. The dwelling house had walls of *bousillage* between posts and was covered with weatherboards. It is likely that Isaac Leblanc's house had two rooms, possibly representing a more permanent "third generation" Acadian structure (Ancelet et al. 1991:118). Other buildings were a storehouse measuring 20 *pied* (21'4") by 14 *pied* (15'); a barn of *poteaux en terre* (post in earth) measuring 30 *pied* (32') by 25 *pied* (26½'); and there were three "negro cabins." Leblanc owned seven slaves. They were:

Name	**Origin**	**Designation**	**Age**
Antoine	Hiboux [Ibo]	negro	45
François	Nago	negro	30
Joseph	[?]lou	negro	--
Rozette	Creole	negress	15
Catherine	Creole	mulatress	12
Rosalie	Creole	negress	12
Charlotte	Creole	negress	10

Seven slaves was a relatively sizable number for an Acadian planter to own in this early period and probably indicated that Isaac Leblanc's habitation had developed well past the subsistence-farm stage. The secondary sources consulted (Marchand 1965:70; Behrman 1986:85) do not provide further information from the inventory on livestock, furniture, or tools that might indicate the sort of agricultural activity taking place on the tract.

Land Tenure in the Darrow Area During the Antebellum Period: 1803-1861

At the end of the colonial period, Joseph Leblanc held the former Isaac Leblanc tract, which was probably the upper eight arpents front of Section 5. Land tenure for this area in the antebellum period, from 1803 to 1861, is unfortunately more difficult to determine, and involves a complicated and incomplete chain-of-title. Conveyance documents for the disposition of the former Isaac Leblanc tract could not be located. However, in 1820, Simon Nabor Braud purchased a tract of 1 arpent 19 toise front from Anne Marthe Blanchard, the widow of Joseph Leblanc. The upriver neighbor of this tract was Andre Leblanc, who could not be identified as a relative of Isaac or Joseph Leblanc, although he probably was. Below this tract was Michel Doradou Bringier's Hermitage Plantation (COB 3:260).

It seems the former Isaac Leblanc tract was subdivided, and it is possible that Isidore Blanchard acquired the upper four arpents of Section 5 in the first decade and a half of the American period. At the beginning of the American period, Isidore Blanchard registered a U.S. claim to Section 11, which had a four-arpent front. On January 31, 1818, Blanchard sold an 8-arpent front tract to Judge Philipe Carlier d'Outremer for 11,000 *piastres* (COB 3:245). The neighboring tracts are not specified on this conveyance, but it is possible that this 8-arpent tract included four arpents in Section 5. On June 18, 1840, d'Outremer purchased a tract from Ferdinand Landry, measuring 3 arpents 11 toise front ("more or less") and running to a depth of 40 arpents, but minus the "yard and garden" at the front of the tract, reserved by the seller. Ferdinand Landry was the heir of Joseph Landry, and this tract was adjacent to d'Outremer's lowerline. The price was 1,500 *piastres* (COB 16:212). This Landry tract very probably encompassed the lower three arpents of Section 5, minus its frontage.

By the 1830s at the latest, portions of the frontage of the upper eight arpents of Section 5 had also become detached from the major part of the tract. Prior to 1834, François Boze *pere* had acquired a tract measuring 130½' on the river by a depth of 2 arpents 120', within the upriver 8 arpents of Section 5. This tract was purchased at the public sale of Boze's succession by his wife, Marie Jeanne Joseph Boyer Boze, on November 3, 1834 (COB 24:212).

The annual *Statement of the Sugar Crop Made in Louisiana* by P.A. Champomier (Champomier 1844, 1846, 1850-1862) indicates the operators of sugar plantations in the decade and a half of the antebellum period. Champomier did not always distinguish between owners and lessees. He also made no mention of landowners who owned tracts too small to raise cane in commercially significant amounts. Champomier's listings are a useful supplementary source of information for land tenure in the large tracts behind the river frontage of the Darrow area. In 1844, Dr. (François Marie) Prévost is indicated as a sugar plantation owner in the area of the future town of Darrow, at 79 miles above New Orleans. Prévost's upriver neighbor is listed as the partnership of J. Waters and [?] Zacharie, and his downriver neighbor as M.D. Bringier (Champomier 1844). In 1846, four sets of owners are listed at 79 miles above New Orleans. They were, proceeding downriver: Mrs. U.J.D. Landry, Molère & Gaudin, Dr. Provost (*sic*), and E. & E. Poursine (Champomier 1846).

On January 30, 1850, Severin E. Braud purchased the frontage of the lower three arpents of Section 5 from J. Rosemond Landry, heir of Ferdinand Landry (COB 22:32). Thus, Severin Braud held the frontage to three arpents of d'Outremer's consolidated eight arpents that were bisected by the Section 5-Section 11 line. The upriver neighbor of this

frontage tract is listed on the conveyance as Juan T. de Egaña (COB 22:32). Egaña's "Wyatt Plantation" was listed in the 1850 edition of Champomier's Statement as the downriver neighbor of Trasimond Landry. Landry's "Leblanc Plantation" was formerly the d'Outremer tract. Listed below Egaña was the estate of Dr. Provost (*sic*), and below Prévost, Mrs. M.D. Bringier. This arrangement of planters in the future Darrow area remained the same in the *Statement* through the 1853 edition.

On May 22, 1854, Jean Louis Prévost sold a small tract to Arsène Bourgeois, consisting of a plot measuring 174' on the face by a depth of 30', lying behind a river frontage tract already held by Bourgeois. The 1850 census return for Ascension Parish lists Arsène Bourgeois, 30 years of age, as a ferryman. Arsène evidently operated the ferry by this date with Jean Baptiste Bourgeois, 58 years of age, also listed as a ferryman. Jean Baptiste Bourgeois was the brother of Arsène Bourgeois, but the census lists them in the same household with their respective wives and children (US Census 1850). The Bourgeois tract was bounded above, below, and in the rear by property owned by Jean Louis Prévost. Jean Louis Prévost was heir of Dr. François Marie Prévost.

On one side of this Prévost tract was the small plot owned by "Suly" [Ursule?] Boze (COB 24:124). The 1850 Census lists the widow of François Boze, 39 years of age, as the neighbor of Jean Baptiste and Arsène Bourgeois (US Census 1850). François Boze *fils*, of New Orleans, sold his inherited Ascension Parish property to Jean Baptiste Bourgeois on August 16, 1854 (COB 24:212).

Jean Baptiste Bourgeois ("J.B.B.") is shown as the owner of the Donaldsonville ferry landing site on Norman's 1858 *Plantations on the Mississippi*. However, the Norman map is at too gross a scale to show the property of Arsène Bourgeois, which bounded the Boze tract on two sides, or the very small plot of Zaïde Delmas (or Damas), which was in turn surrounded by the Boze tract. Zaïde Delmas was a free woman of color, and her house lot was expressly reserved by François Boze in his sale to Jean Baptiste Bourgeois (COB 24:212).

The property above and behind the frontage of Section 5, formerly held by Egaña and Prévost, was evidently held for an unknown period of time between 1853 and 1856 by the widow of Michel Doradou Bringier. By the 1855 edition of Champomier's *Statement*, only Trasimond Landry and Mrs. M.D. Bringier are listed sugar plantation owners in the Darrow vicinity. Norman's *Plantations on the Mississippi* (1858) shows the Widow Bringier owning the greater portion of Section 5 and, in T10S R2E, Section 50. Likewise, Champomier continues to list Landry and Bringier as plantation owners in the area through 1861. However, a conveyance of March 15, 1856, indicates that by that date Trasimond Landry had acquired the property held formerly by d'Outremer and Bringier behind Section 5 (COB 25:12). Trasimond Landry was a prominent figure in Ascension Parish in the antebellum period, owning several plantations and being elected Lieutenant Governor of Louisiana in 1846. There is no evidence that Landry actually resided on his property in the future Darrow area.

The 1860 U.S. Census for Ascension Parish suggests that a small hamlet may have developed in the ferry landing locale prior to the Civil War. Among the residents above M.S. Bringier was Francis Jaume [*sic*], who is noted as a "D. G. & G. Merchant," presumably a store operator. Jaume, a 50-year-old native of France, owned real estate worth $3,000 and personal property worth $7,700. He had a wife and five children. It is not possible to definitely locate Jaume's store, but it may have been near the ferry landing. Also in the area were J.B. LeBlanc, a 40-year-old carpenter, with his wife and four children; J.B. and Arsène Bourgeois, the ferrymen, and their families; and John Gonzalles [*sic*], a 21-year-old laborer who resided with the Bourgeois families (U.S. Census 1860).

Land Tenure in the Darrow Area During the Civil War and Post-Civil War Period: 1861-1878

Ascension Parish was the locale of considerable military activity during the Civil War, since Donaldsonville was a strong point on both the Mississippi River and Bayou Lafourche. Although there is no evidence that a regular military post was established at the ferry landing, the hamlet at the landing opposite Donaldsonville was likely visited by military forces on several occasions.

Donaldsonville was shelled by Union forces in August 1862 and the town was partially destroyed. Fort Butler was subsequently constructed, and was the principal base of Federal military activity in Ascension Parish. In September 1863, Confederate Major General Richard Taylor, commander of the Department of Western Louisiana, was planning a strategic pincer movement of Confederate forces toward the Mississippi River. Taylor proposed that Major General Stephen D. Lee descend from Jackson and Clinton to the east bank opposite Donaldsonville, while Taylor would move north to a point on the west bank about 20 miles below Donaldsonville. However, a night action in the vicinity of the future town of Darrow made Taylor's plans impracticable. At 1:00 on the morning of September 23, 1863, a small force of Confederate cavalry surprised a company of the 14th New York Cavalry under Captain Metcalf, who were guarding a telegraph office in the vicinity of Darrow. It is possible that the telegraph office was located at the ferry landing, to provide a communications link between Donaldsonville and points on the east bank, such as the post at Morganza. Documentation is not definitive as to the location of the telegraph office. Captain Metcalf and about 10 men were captured, although all papers and equipment in the telegraph office were saved from Confederate hands. Metcalf reported the Confederate force at 200 or 300 men; later information indicated that about 80 Confederates took part in the raid (Scott 1889a:317, 318; Scott 1889b:252).

The Federal command in New Orleans responded fairly quickly to the September 23 raid. On September 25, an expedition of 1,500 infantry, one battery of light artillery, and a detachment from the 16th Regiment, Indiana Volunteer Mounted Infantry, left Carrollton by steamer for Donaldsonville. This force was joined by about 120 cavalrymen at Donaldsonville. Crossing the river, presumably at the ferry crossing, the Federals then moved up the New River Road to New River. The Confederate force had left the vicinity, and the expeditionary force returned to Carrollton on September 27 (Scott 1889a:317-318).

Activity by Confederate partisans and by jayhawkers continued in Ascension Parish during the last two years of the war. The Federals established a post at Hermitage Plantation, the major Federal post between Morganza, the Amite River, and Manchac. As such, troop transports and other vessels more often made use of the Hermitage plantation landing rather than the ferry landing opposite Donaldsonville. In the first week of October 1864, jayhawker activity had become so prevalent in Ascension Parish that the 118th Illinois Mounted Infantry patrolled daily from Hermitage Plantation for a distance of 10 miles up the east bank. Skirmishes between Federal troops and jayhawkers occurred in November 1864 in the New River area, and jayhawkers remained a problem in Ascension Parish into the spring of 1865 (Scott 1889a and 1889b *passim*; Davis et al. 1893:878, 945-946).

The direct impact of the Civil War on the Darrow vicinity is not known. After the Civil War, the frontage of Section 5 remained unconsolidated and in the possession of several owners. On January 16, 1874, Alexander S. Landry, acting under power of attorney for Andrew J. Landry, sold to Louis Delmas a portion of the frontage of Section 5, consisting of a 2½ by 3 arpent (2½ acre) tract. This 2½ arpent-front tract was about 5½ arpents below the upperline of Section 5. Excepted from the sale was a plot of ¼ arpent (48') front by an unspecified depth, owned by Valsin Bourgeois, which was bounded on three sides by the tract

purchased by Delmas. This Bourgeois property may have been a portion of that acquired by Arsène Bourgeois prior to 1854, or that acquired from Jean Louis Prévost also in 1854. Below the parcel acquired by Delmas from Landry was a tract of unknown size owned by Augustine Isidore (COB 30:409).

On January 26, 1875, Louis Delmas sold a lot, with a frontage of 80' on the river and a depth of 2½ acres, to Felix Leblanc. This plot was a portion of the parcel purchased by Delmas on January 16, 1874, and was located immediately below Augustine Isidore. Delmas retained the remainder of his 1874 purchase, lying below the portion he sold to Felix Leblanc (COB 30:593).

In the immediate post-Civil War period, the "Leblanc Plantation" of Trasimond Landry had been acquired by the Citizen's Bank of Louisiana, undoubtedly because of foreclosure. By October 1871, Amos S. Darrow of Iberville Parish had acquired the portion of the property held by Trasimond Landry situated above and behind the frontage of Section 5 (Misc. Acts 3:459). In 1871, Darrow was operating the Leblanc Plantation with a partner named Kennedy. Darrow and Kennedy continued to be listed in Bouchereau's annual *Statement* as operators of the Leblanc Plantation until 1876. However, Darrow lost ownership of the former Trasimond Landry tracts by virtue of a Sheriff's seizure. The former Trasimond Landry properties were sold at a public sale to the Citizen's Bank of Louisiana on January 3, 1874 (COB 30:414). Three years later, on June 16, 1877, the partnership of Amos K. Darrow and Benajah Gibson purchased from the Citizen's Bank a portion of the Leblanc and Wyatt plantations, formerly owned by Trasimond Landry. This tract consisted of the upper 8 arpents of Section 5, excepting "the lot belonging to Louis Delmas and others... the Delmas or Ferry lot," and the rear lands to a depth of 40 arpents. The purchase price was $5,550.00 (COB 31:174).

Amos S. Darrow died prior to January 14, 1878. On that date, Benajah Gibson bought Darrow's 50% interest in the Darrowville tract from Darrow's widow, Belle K. Darrow (COB 31:296). It is not known if Darrow and Gibson were planning together to develop a community in the vicinity of the Donaldsonville ferry landing on the east bank of the Mississippi. This seems likely, since Gibson began selling lots in "the projected town of Darrowville" no later that March 9, 1878 (COB 31:495). It could be said that the town of "Darrowville," later shortened to Darrow, was established in the first months of 1878.

The Donaldsonville-Darrow Ferry

There can be little doubt that the existence of regular ferry service to Donaldsonville was the greatest reason for Benajah Gibson to establish the town of Darrow. The ferry was already at least 58 years old in 1878, a result of commercial and courthouse traffic from the east bank of Ascension Parish to Donaldsonville. A ferry was established across the Mississippi from Donaldsonville to the area of Darrow and ran with sufficient regularity to appear on John Melish's *Map of Louisiana*, published in 1820 (Melish 1820). Regular ferry operation was definitely established by 1846, when Donaldsonville issued a franchise requiring the holder to maintain "two substantial flatboats, one large and one small, and two skiffs in good repair." The ferry was to operate 24 hours per day, with a fare for foot passengers of 25¢, double after sunset, and $2 for a carriage or wagon and horse. The flatboats were towed by the skiffs, using human muscle-power, perhaps that of slaves. The whole crossing reportedly took nearly an hour (*Ascension Parish Magazine*:31).

The ferry consisted of a flatboat towed by skiffs until either 1871 or 1874, when a 5.81 ton burthen steam tug, the *Little Minnie*, began operation. Michel Lanoux purchased the first steam ferry franchise for an annual fee of $242. From 1875 to 1877, the franchise was held by Raphael Mousse, who had operated the pre-steam ferry for a time. For an indeterminate

part of this time period, the *Little Minnie* was evidently out of operation, but was back in use in 1878. After this time, the ferry service from Donaldsonville to Darrow seems to have run consistently. In 1883, the *Little Minnie* was replaced by the *Bella Israel*, owned by Braud & Bateman. The latter vessel sank and was replaced by the *Grand Isle,* which was itself replaced in 1894 by the *Ascension*, a small steam catamaran ferry. From 1894 to 1904, the franchise was held by Constantin & Bragard. During this period, a total of $600 per year was paid by the City Council of Donaldsonville and Police Jury of Ascension to the ferry operators so that school children could cross the river free of charge (*Ascension Parish Magazine*:31; Marchand 1949:53-56).

The ferry franchise was acquired in 1904 by H.C. Whiteman, who put the single-hulled boat *Washington* into service. In 1909, the franchise began to be issued in 10-year terms. The first was held by the Burnside & Donaldsonville Packet Co. and their boat *Ruth*, from 1909 to 1918. In 1898 this firm established a mule-car trolley from the Burnside station of the Yazoo and Mississippi Valley Rail Road to the Mississippi River. From a landing on the river, the Burnside & Donaldsonville Packet Co. operated a passengers-only steam ferry, first the *Gracie Kent* and then the *Virgie*, to Donaldsonville, offering a competing route for travelers from the east bank of Ascension Parish to Donaldsonville. The Burnside & Donaldsonville Packet Co. renewed the franchise for the Donaldsonville-Darrow ferry in 1918, but in 1923, the Burnside-Donaldsonville ferry and its mule-drawn trolley ceased operation. Instead, the Burnside & Donaldsonville Packet Company began a bus service from Burnside to Darrow, where they also held the ferry franchise during this period.

In March 1928, the Bisso Co. of New Orleans paid $40,000 for the ferry franchise, and replaced the *Ruth* with the *Joseph A. Bisso*. Previous to the Bisso period, the vehicle ferry had only run during daylight, and a skiff had carried passengers only at night. The Bisso Company began running the large ferry to midnight. The South Louisiana Fair was a very popular regional event for many years. Beginning in 1929, the Bisso Company added boats to the Donaldsonville-Darrow service from time to time for this and other special events. In 1939, Bisso renewed the franchise and added a full-time second ferry boat, the *George Prince*, in 1941 (Mrs. Clotilde Graves, personal communication to Maygarden 1996; *Ascension Parish Magazine*: 1985 pp. 60-61).

In 1961, the Jimmie Davis administration announced a plan to construct a bridge across the Mississippi, connecting the east bank of St. James Parish and the west bank of Ascension Parish. The Sunshine Bridge was constructed in the period 1962-1964. The bridge was to have a significant impact on the Donaldsonville-Darrow ferry, and with it, the town of Darrow. The Sunshine Bridge opened for traffic at 12:00 midnight on October 1, 1964. The first car across the bridge (at 12:05) was driven by Leroy Frederic of Convent, who heard on his car radio that the bridge was open. Portentiously, Frederic decided to use the bridge at the last moment, instead of the Donaldsonville-Darrow ferry. Under the terms of the bond sale which financed the bridge, the Darrow ferry was to be phased out. The ferry boats were sold on November 8, 1965, to St. John the Baptist Parish; the *George Prince* stayed in service another 90 days on the Donaldsonville-Darrow run (*Ascension Parish Magazine*: 1985, pp. 60-61). The loss of the ferry service "killed Darrow" in the opinion of some community residents (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

Darrowville and Darrow

Benajah Gibson planned to develop plots in Section 50 as part of Darrowville (see below), but only those in Section 5 were actually developed as part of the town. The Donaldsonville *Chief* announced the sale of lots in the new village of Darrowville in its March 28, 1878 edition:

> Mr. Ben Gibson offers for sale at very low prices 164 town lots situated in the proposed village of Darrowville, and a dozen lots in the rear of the others containing nearly 17 acres each. The site of Darrowville is eligibly located on the left bank of the Mississippi river, opposite the upper portion of Donaldsonville. It is neatly laid off in lots of uniform size, as per plan drawn by Parish Surveyor Bloomfield, which is on file in the Recorder's office for public inspection. The direct Road to New River which, it is hoped will be constructed before many months, will form the lower [*sic*] boundary; and the steam ferry landing is near the center of the river front. There can be no doubt that Darrowville is destined to become a flourishing little town-- a valuable auxiliary to Donaldsonville-- and an investment in its lots is quite certain to prove remunerative in the near future" [quoted in Marchand 1949].

It is possible that the Donaldsonville ferry landing on the east bank of the river had already drawn some commercial enterprises, such as general stores or livery stables, to T11S R2E:5 prior to the purchase of most of the section by Darrow and Gibson in 1877. With the establishment of regular steam ferry service and the offer of small plots for sale, the ferry landing was given greater impetus to develop into a small community. A plan of the Darrowville Levee below the ferry landing survives from ca. 1880 (Figure 8) as does a subdivision plan of 1884 (Figure 9). Extrapolation from these and later maps indicates that the ferry landing has been located at the foot of Main Street since the establishment of Darrowville. However, as discussed below, the foot of Main Street has moved inland with successive levee setbacks.

It is possible if not probable that the ferry landing was located downriver from Main Street prior to Gibson's subdivision of the rest of Section 5, and moved to accommodate his projected town plan. Available documentation does not indicate that Louis Delmas or other small plot owners held any of the area above Main Street prior to 1878.

A post office was established at Darrowville on December 27, 1881, and the United States Postal Service, with its own logic, officially designated the post office location as "Darrow." Eventually, the shorter name for the community became more popular, but the town was often referred to as Darrowville well into the twentieth century. Darrow was the fourth post office in Ascension Parish (Marchand 1931:119). The Donaldsonville *Chief*, reflecting uncertainty as to the name of the town, reported on February 4, 1882:

> At the solicitations of residents of the left bank of the river, a new post-office has been established at Darrowville, opposite Donaldsonville, on the Mississippi. It will be known by the name of Darrow post-office, and Dr. A.C. Love has been appointed postmaster... For the present mail matter will be delivered and received at Darrow three times a week by the carrier on the Donaldsonville and Island route [quoted in Marchand 1949].

Gibson was evidently encouraged by the early growth of his little town. In 1881, he purchased from the Citizen's Bank the "6 acres front" by "40 acres depth" tract immediately upriver from the tract he and Darrow purchased in 1877, adjacent to Darrowville. Gibson and Darrow had leased this tract in 1876 from the Citizen's Bank, and the tract was used to grow corn and hay and raise cattle, sheep, horses, and mules. Gibson had bought Amos Darrow's interest in the lease from Belle Darrow in 1879 (COB 31:576).

Originally, Darrowville was to be bounded on its upper side by the New River Road or Wyatt Street. However, in 1884, a new subdivision plan (Figure 9) was drawn up by surveyor W.W. Darton under Gibson's direction. Darton's plan, preserved in the Ascension Parish Clerk of Court's office, called for additional streets perpendicular to the river above the

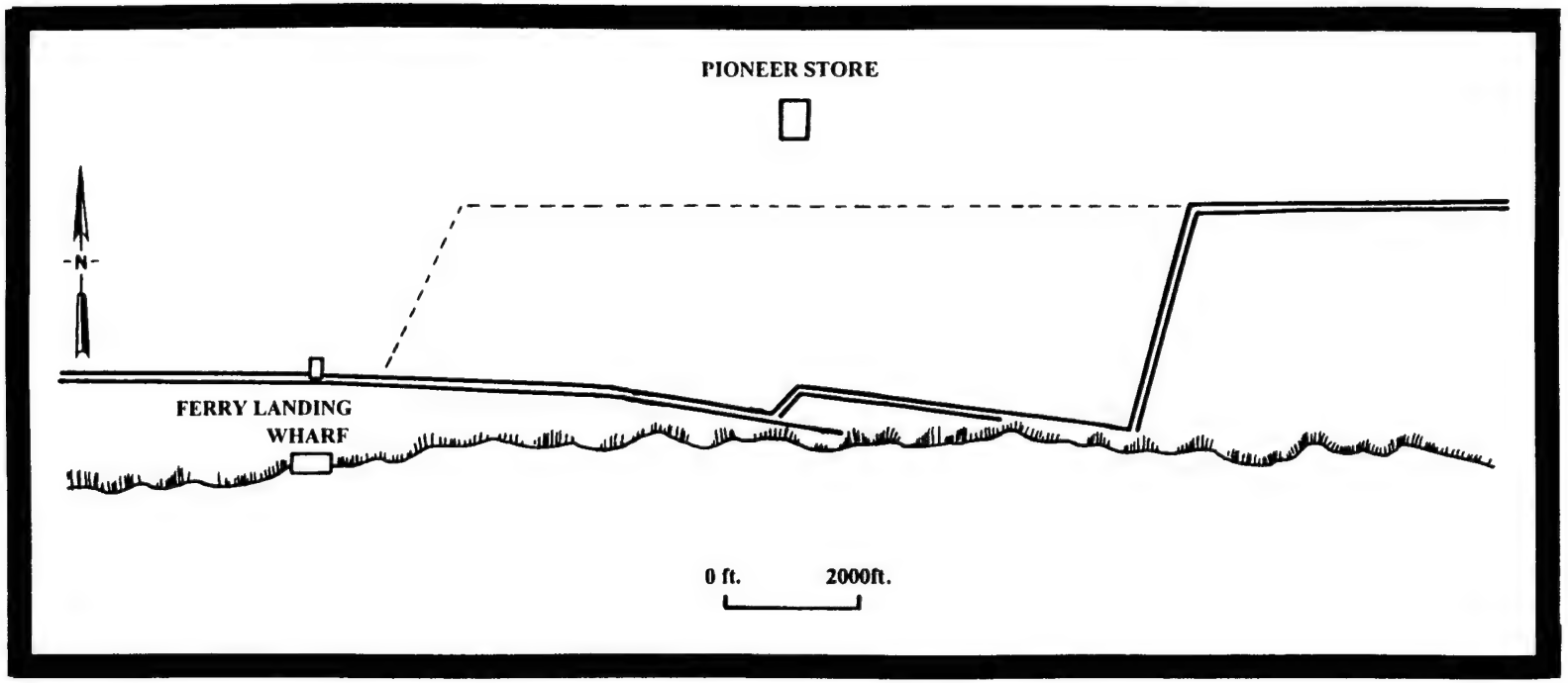


Figure 8. *Darrowville Levee, Parish of Ascension, Mississippi River Left Bank* (Pontchartrain Levee District 1879-1880). Redrawn.

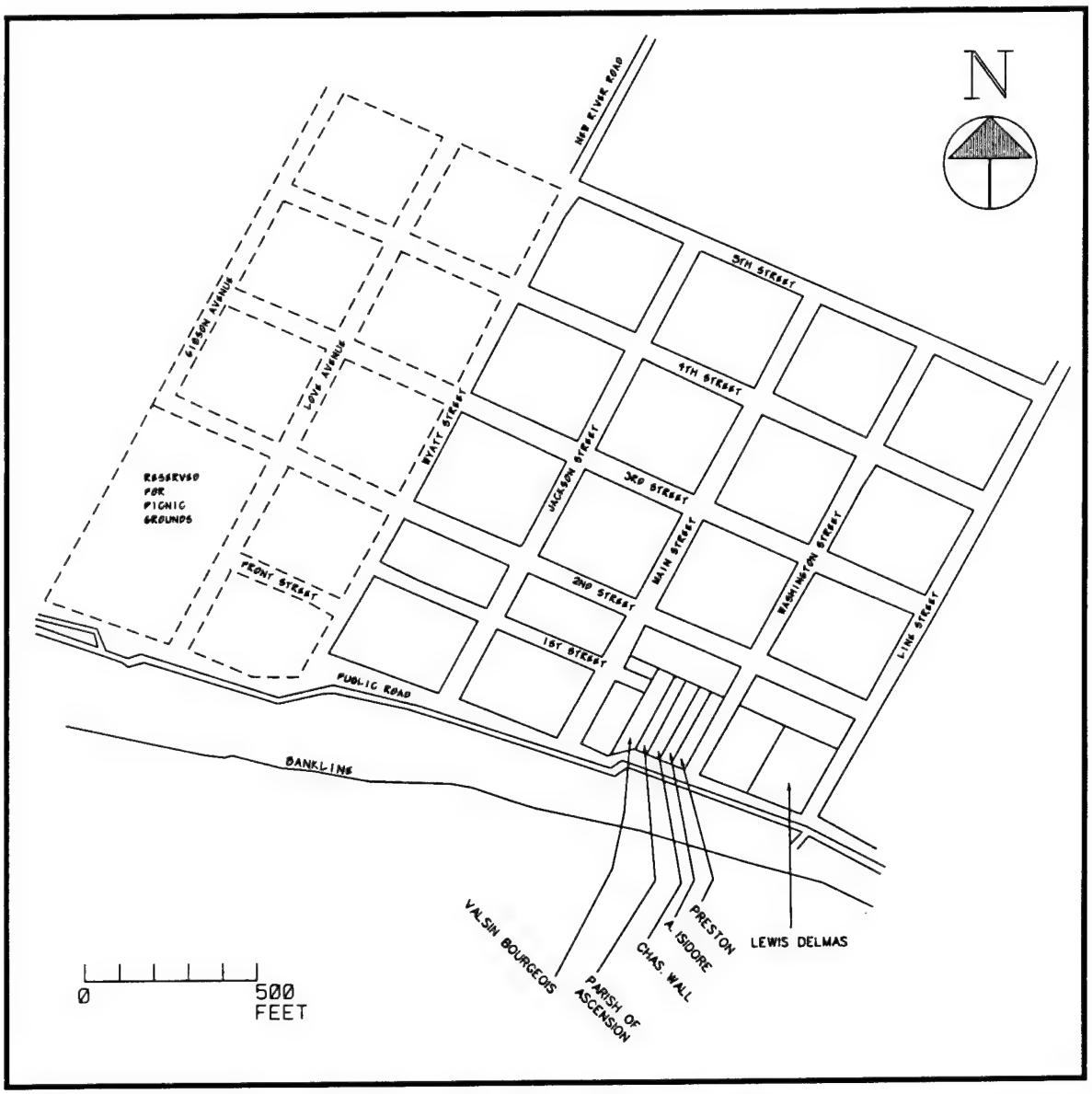


Figure 9. *Plan of Darrowville, Opposite Donaldsonville, Louisiana* (Pontchartrain Levee District 1884). Redrawn.

New River Road, on the tract purchased by Gibson in 1881. Gibson and Darton projected seven streets perpendicular to the river; Gibson Avenue, Love Avenue, Wyatt Street, Jackson Street, Main Street, Washington Street, and Line Street. Wyatt Street, or New River Road, in fact remained the furthest upriver street of Darrow, and Gibson and Love avenues were not built. It is possible that Gibson's death in October 1884 (Marchand 1949) ended any plans to expand Darrowville in an upriver direction.

The surviving 1884 plan (Figure 9) also indicates the location of plots held by pre-Darrowville inhabitants Louis Delmas, Augustine Isidore, Valsin Bourgeois, and others at this date. These plots were all located downriver from Main Street and on the river side of Second Street, and suggest the limits of development of the ferry landing hamlet prior to development of Darrowville by Gibson. Unfortunately, the location of these small plots in the pre-1884 town cannot be fully correlated with the location of plots from available conveyance documentation. As mentioned above, in 1877, the ferry landing was at the front of the Ferry Lot or that owned by "Delmas and others." This probably meant the front of the area bounded by Main Street and Line Street, on the river side of Second Street.

Among the factors working against the growth of Darrow was the location of the town on a cut bank of the Mississippi River. The 1884 plan shows that originally there were six streets parallel to the river in Darrowville; the Public Road (River Road) and First through Fifth streets. At an unknown date between 1884 and 1904, the Darrowville levee was set back or straightened upriver from Main Street, and the town lost a portion of the row of blocks between First Street and the Public Road running along the levee foot. About 1909, a new Darrowville Levee was built. This levee followed the pre-1904 alignment as far as Washington Street, but below that point turned away from the river before again turning parallel to the river at Second Street. This ca. 1909 levee setback destroyed almost all of a block bounded by Washington Street, Second Street, and the 1884 Public Road, and probably eliminated most of the material remains of the buildings located in the ferry landing hamlet prior to 1878. This 1909 levee setback was indicated in pencil on the surviving copy of the Darrowville levee map of 1880 (Figure 8), but paradoxically, not on the Darrowville New Levee map of 1909 (Figure 10).

Among the early businessmen in Darrowville was Lucien W. Armitage (Figure 11). Armitage was born in 1856 in Iberville Parish and came to Ascension Parish in 1875. He worked at Burnside's Houmas store until 1882, when he established his own Drug & General Merchandise Store in Darrow. Armitage became a prominent citizen in Ascension Parish. Active in Democratic Party politics, he served as parish school board president. He was postmaster of Darrow for several years in the 1890s, until the McKinley administration replaced him with a Republican (Garon 1976:11). His large multi-building store (Figure 12) was located at the corner of Main Street and the Public Road, opposite the ferry landing, on the upriver side. L.W. Armitage, or perhaps his wife, eventually acquired much of the property in Darrow on the river side of Second Street. One of the Armitage store buildings from Darrow has been moved to the Cabin Restaurant at Burnside (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

Ascension Parish historian Sidney A. Marchand spent a couple of years in Darrow at the beginning of the twentieth century. Marchand's uncle, Octave S. Broussard, purchased a store (Figure 13) in Darrow from Ellis Nasif in January 1901, and the young Marchand began work at the store that summer. In later years he remembered clearly the locations of businesses in the vicinity. The Broussard Store, dubbed "the Home of Low Prices," was at the corner of Main Street and the public road, opposite the ferry landing and the Armitage Store. The store faced west, toward the Armitage Store, and to its rear was the livery stable of Robert E. Lanoux, where horses and buggies could be rented (Marchand 1952:53-54). The Broussard

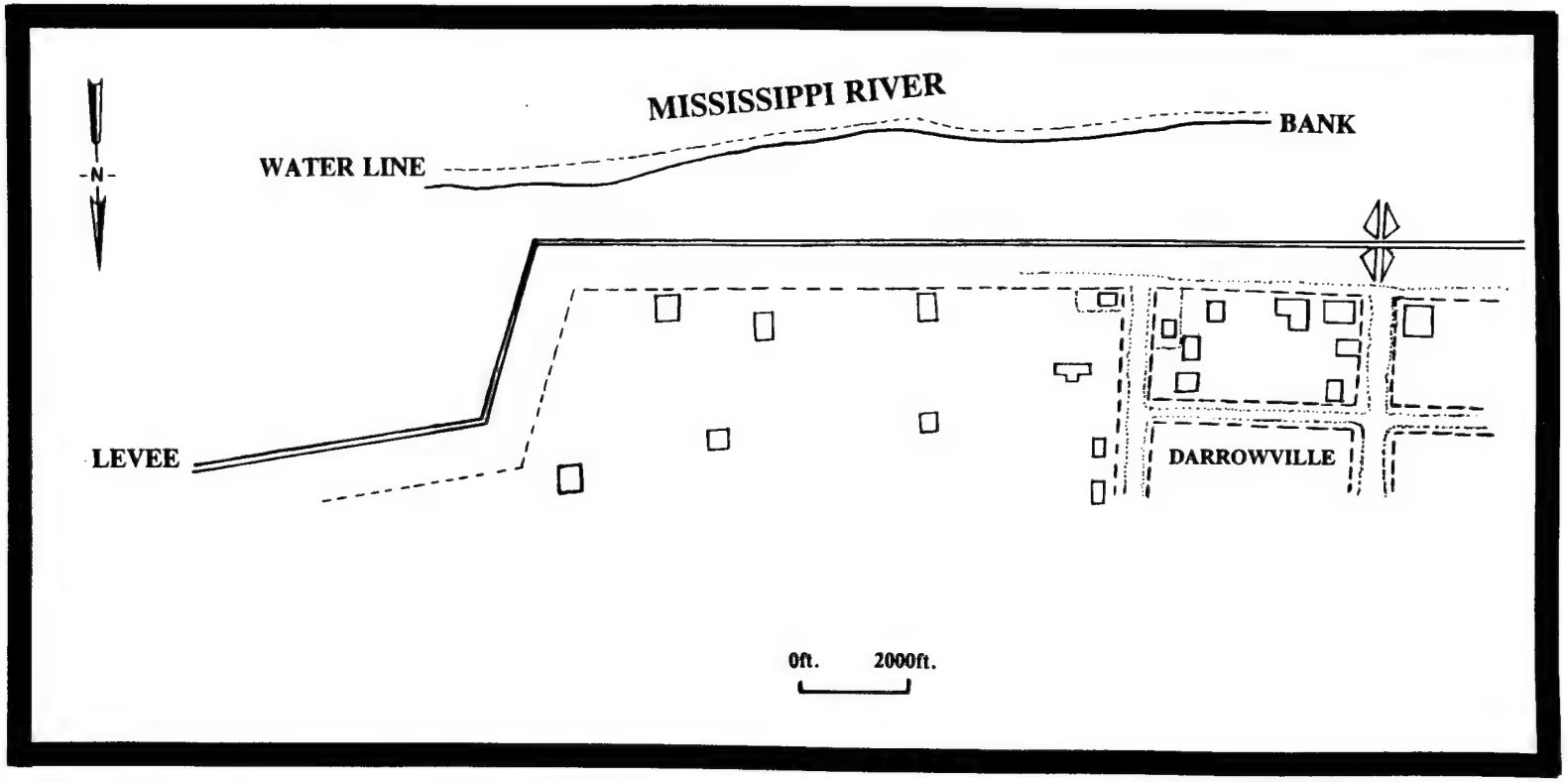


Figure 10. *Darrowville New Levee, Ascension Parish, Louisiana* (Pontchartrain Levee District 1909). Redrawn.

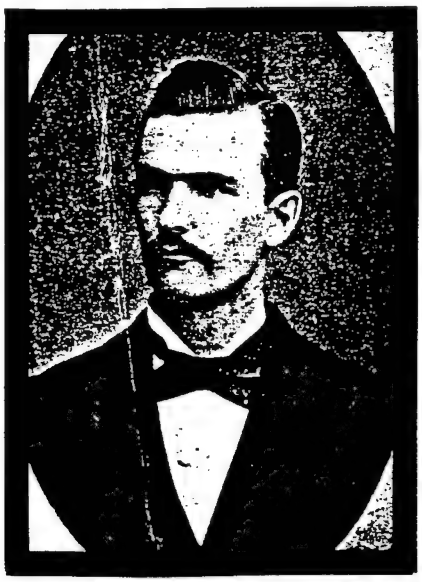


Figure 11. Lucien W. Armitage, prominent citizen of Darrow in its early years (from Garon 1976:11).

Figure 12. The store of Lucien W. Armitage, at the corner of Main Street and First Street (River Road), Darrow, in 1905 (from Marchand 1959:24).

Figure 13. The store of Octave S. Broussard, at the corner of Main Street and First Street (River Road), Darrow, in 1906 (from Marchand 1952:53).

Store later became the store of D. Casso (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

On the west side of the ferry landing ramp, across the public road from the Armitage store, was the livery stable of Herman B. Landry. This was later the location of the Darrow post office. It is likely that the ability of Darrow to support two livery stables in this period is indicative of its importance in the regional transportation network. Marchand remembered, as part of his shop duties, meeting the first ferry of the morning every day to pick up bread sent to Darrow from a Donaldsonville bakery (Marchand 1952:53-54).

Among the citizens of Darrow that Marchand could recall from the turn-of-the-century period were the families of Baptiste Boudreaux and his son Joseph Boudreaux, Edmond Marchand, Mrs. Cale Chapman, the Serre family, and of course, the family of Octave Broussard. Among the African-Americans of Darrow that Marchand remembered from the early decades of this century were the Reverend Jim Robertson (pastor of Ebeneezer Baptist Church), John Brown, J. Alfred LeBlanc, Jim Gordon, Leon Baptiste, Lucinda Dennis, Effie Kennix, Effie Alexander, and Dr. E.A. Raymond, a physician whom Marchand states was "respected by all" of Darrow's citizens (Marchand 1952:53-54). Reverend Robertson had a large house and plot of land at the "back" of Darrow, where the Darrow Community Center is now located (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

By 1914, the population of Darrow was approximately 200 persons. Road transportation to and from Darrow was improved in the period 1915 to 1919, when gravel was applied to River Road on the east bank through Ascension Parish from the Iberville line to the St. James line. About this time, gravel was also laid on the road from Geismar to Darrow or the New River Road (Marchand 1949:98-103). However, the old New River Road fell into disuse and was superseded by LA Hwy. 22 decades later (Mrs. Clotilde Graves, personal communication to Maygarden, 1996). In 1919, the levee fronting Darrow was enlarged, still following the alignment of the ca. 1909 Darrowville levee.

By the 1920s, Darrow was a thriving small town. The population of Darrow grew to between 300 and 500 people by 1930, about evenly divided between white and African-American residents (Davis 1940:165; Marchand 1931:119). Darrow was not residentially segregated, and European-Americans and African-Americans owned properties throughout the town. At the "front" of Darrow, facing onto First Street (River Road), were the large Armitage and Casso (formerly Broussard) stores. Both were like small department stores, with several buildings selling groceries, hardware, dry goods, and drugstore items. The Casso store also had a lunch counter. A garage and a funeral parlor were also located in the front of Darrow. Interspersed with the commercial buildings at the front of Darrow were residences, including the large house of the Armitages. Opposite the Armitage Store, against the levee, was the Darrow post office. Across the foot of Main Street, opposite the Casso Store, was the fruit stand of Ms. Polly Ambeau. Four churches were located in Darrow: Mt. Zion Baptist Church, Ebeneezer Baptist Church, Haven Chapel Methodist Church, and St. Anthony's Catholic Church. St. Anthony's Church was a large frame building located at the corner of Wyatt or Water Street and First Street (River Road). All of the buildings at the front of Darrow were frame structures, including the large Armitage and Casso stores and Armitage house (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

The location of the buildings at the front of Darrow prior to the levee setback of 1931-1932 is shown less accurately on the 1932 *Chart No. 46, Pontchartrain Levee District* (Figure 14) than on the *U.S. Darrowville New Levee* map (Figure 15). The former map shows a cotton gin in the location of St. Anthony's Catholic Church. No cotton gin was located in Darrow within living memory (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

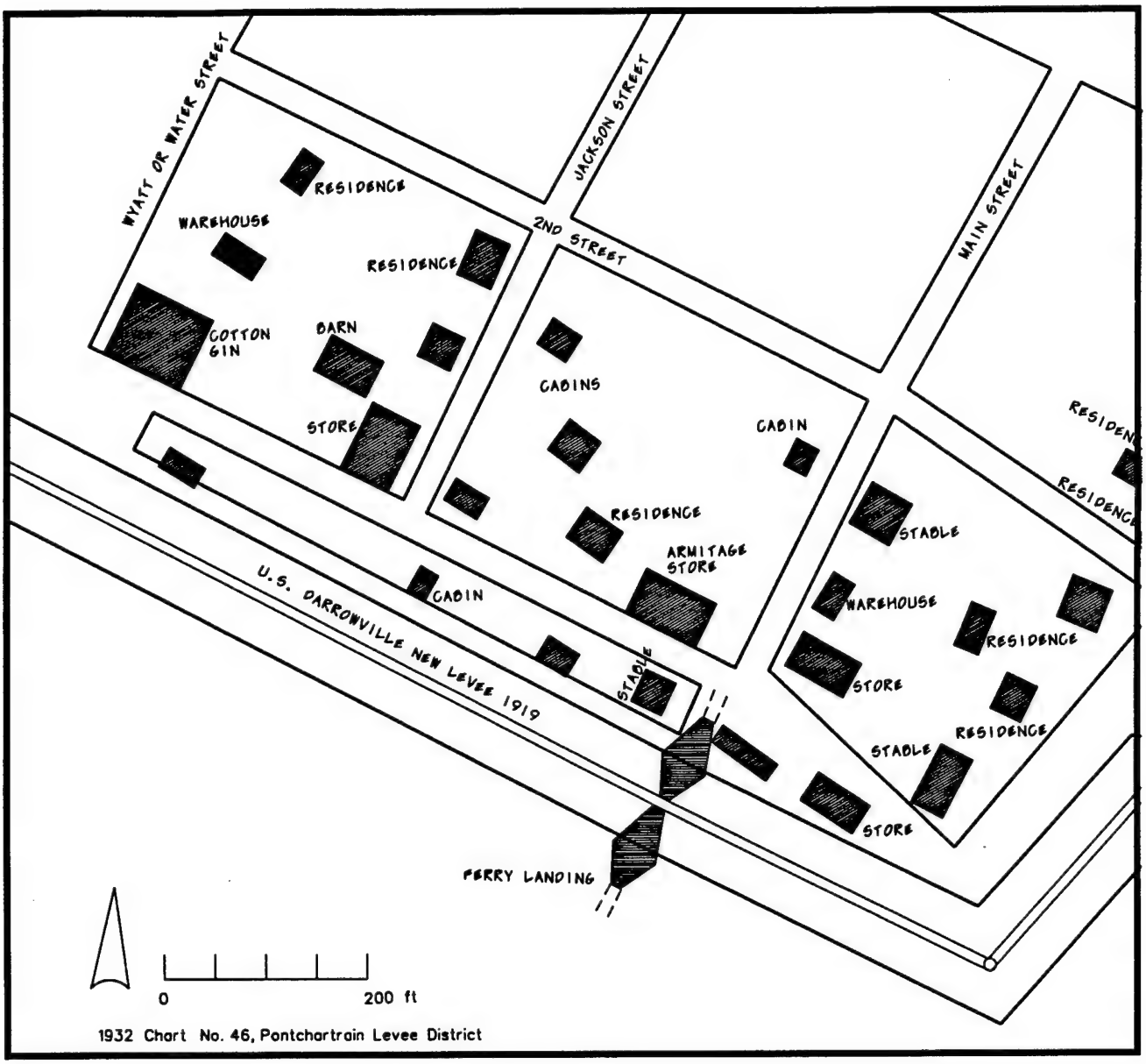


Figure 14. *Chart No. 46, Pontchartrain Levee District* (Pontchartrain Levee District 1932a). Redrawn.

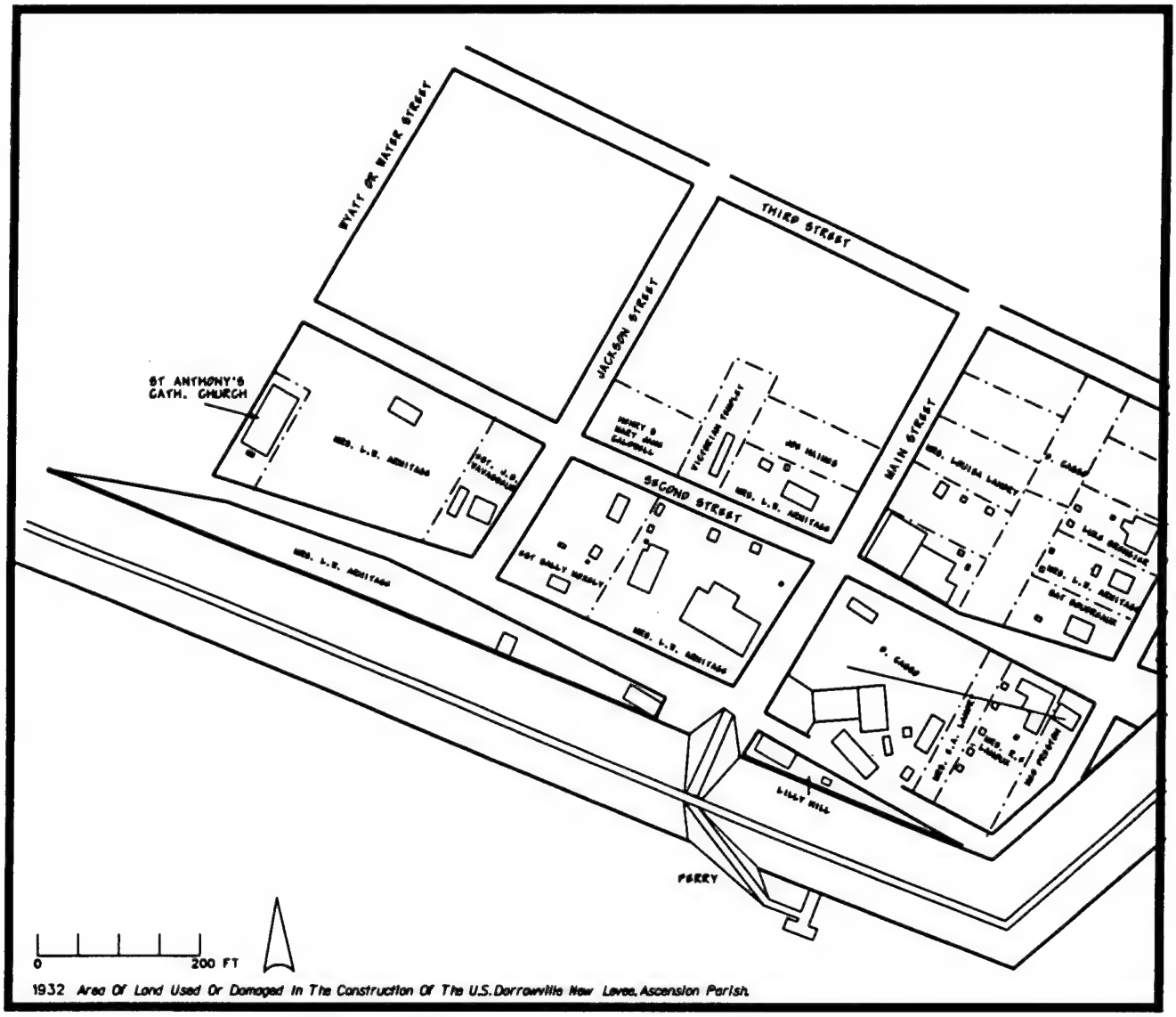


Figure 15. *U.S. Darrowville New Levee* (Pontchartrain Levee District 1932b). Redrawn.

Many of the African-American residents of Darrow worked seasonally harvesting and processing sugar cane ("make the grinding") on surrounding plantations. Some even crossed the river daily on the ferry to work in the Donaldsonville area. The seasonal nature of available work in the region caused many of the inhabitants of Darrow to produce much of their own foodstuffs. The typically large lots of the town residents were usually planted in vegetable gardens and fruit trees. The gardens and orchards of Darrow not only provided the residents with food for themselves but also with a source of cash. Vendors would pass through in motor trucks and buy fruit and vegetables from the Darrow residents. Livestock, such as chickens, hogs, and milk cows, were commonly raised within Darrow itself. Fishing, shrimping, and hunting of frogs and turtles were vital activities. Fishing and shrimping in the Mississippi were carried on from skiffs. The wooded batture also was a location for fishing and hunting. However, as the 1920s progressed, caving banks on the Darrow batture became a greater problem. Logs floating down the Mississippi, particularly in the spring, were collected with gaffs by men in skiffs; quantities were large enough to provide for heating, cooking, and sale as cordwood (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

Besides providing food and material resources, the Mississippi River remained a great presence in community life. The Baptist churches of Darrow continued to baptize in the river, with spectators viewing from the ferry, until caving banks made use of the batture difficult. Prior to World War II, Darrow enjoyed visits from traveling circuses, baseball games, the annual South Louisiana Fair in Donaldsonville, and other recreational opportunities; walking along the Mississippi levee for pleasure remained a common pastime. The ferry was also a prominent feature of daily life. The ferry landing had a segregated, covered waiting area. Schoolchildren crossed the river to Donaldsonville every morning and returned every afternoon, regardless of the weather. During the South Louisiana Fair, ferry traffic through Darrow was extraordinarily heavy. Banking and more extensive medical care required a trip to Donaldsonville. At Carnival time, the Donaldsonville krewe of the Zulu Social Aid and Pleasure Club dressed in Darrow and crossed on the ferry, to be greeted by throngs of spectators (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

The Mississippi River nearly topped the Darrowville Levee of 1919 on several occasions, and crevasses in the vicinity caused some relatively minor floods in Darrow in the 1920s. Enlargement of the levee was clearly a necessity, and the caving bank problem required a setback. Plans were made to begin construction of a new levee in 1931. Numerous buildings were moved from the front of Darrow prior to the actual construction of the new levee in 1931-1932. Before the advent of powerful mechanical lifts and flatbed tractor-trailers, the buildings were jacked up by hand and shifted onto planks lying atop large cylindrical rollers. A truck pulled the building over the rollers, while the "house rolling gang" moved the rollers and planks, by hand, from the back to the front of the building as it rolled along. Among the buildings moved from the front of Darrow was St. Anthony's Catholic Church. The large frame building was moved to a location outside of Darrow on LA Hwy. 22, and it has since been replaced by a cinder-block structure. As mentioned above, one of the Armitage Store buildings was moved and is now located in Burnside. Buildings from the Casso store were moved to Gonzales. In addition, some of the residential units from Darrow were moved to Tezcuco Plantation. Land owners were compensated for the loss of property caused by the new levee construction, but the levee setback eliminated the older commercial establishments of Darrow in one fell swoop. This event was seen by some as a serious blow to the town of Darrow (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

In November 1931, construction began on the U.S. Darrowville New Levee. The levee was built by the two large land dredges of the John McWilliams Company, a firm specializing in levee building. Work on the Darrowville New Levee was begun at a point immediately below the ferry landing, and proceeded down river to the St. Elmo levee, approxi-

mately one mile below Darrow. The stretch of levee running upriver from the ferry landing, also approximately one mile in length, was constructed later. This levee setback obliterated gravel-lined First Street (River Road, LA Hwy. 1), and the footprint of the levee bisected three of the four town blocks between Third and Second Street. A new gravel-lined route for LA Hwy. 1 was constructed along the inside of the levee after the setback (Marchand 1959:36).

The Darrow oil field was discovered in 1932 and may have slowed the decline of population in the Darrow vicinity. Nonetheless, the population of Darrow declined something like 35% to 50% between 1930 and 1940 to about 200 persons (WPA 1940:527). Despite this decline in population, ferry traffic was heavy enough during the World War II years for a second ferry boat to be added to the Donaldsonville-Darrow service. Darrow shared in the widespread and substantial decline in population of the sugar-producing areas of the state during the twentieth century, largely because of the shrinkage of demand for agricultural labor and outmigration of African-Americans from rural areas to urban centers (Goins and Caldwell 1995:52, 53, 54; Mrs. Clotilde Graves, personal communication to Maygarden, 1996). The establishment of major chemical plants in Ascension Parish had a limited impact on population loss because the demand for skilled labor was met with workers from elsewhere. Meanwhile, the chemical industry is viewed by some older residents as the major source of perceived environmental degradation in the area since World War II (Mrs. Clotilde Graves, personal communication to Maygarden, 1996).

Historical Map Sources

Seven historical maps showing Darrow (Darrowville) from the late-nineteenth century through the 1932 levee setback were located during the course of research. Three of these maps were sufficiently detailed in terms of depictions of standing structures to be useful for the planning of field investigations. CAD overlays of these maps on the modern hydrographic survey map of the area were produced.

The 1880 map depicts the ferry landing and wharf south of the site area and the Pioneer Store east of the site (Figure 8). No structures are shown within the project area at this date. The second map, dating to 1884, clearly illustrates that the town of Darrowville had been subdivided into smaller lots, but no structures were drawn on the map (Figure 9). A map of Darrowville drafted in 1909 suggests that the remains of portions of two north/south streets and of five structures should be located between the modern levee and borrow pit (Figure 16). Comparison of the 1909 map with one of the 1932 maps (Figures 17 and 18) suggests that these structures may have included residences and possibly a stable.

The two 1932 maps of Darrowville show the construction of the new levee and the structures which this construction displaced. Despite being drafted at the same date, the two maps are very different. It is likely that of these, the second map (Figure 18) is more accurate. The structures depicted on the second map show different outlines rather than the first map (Figure 17) which depicts all structures as different sized rectangles. The second 1932 map indicates the residences of Ned Preston, Mrs. R.E. Lanoux, and Mrs. L.W. Armitage are between the toe of the modern levee and the borrow pit. Also, at least two outbuildings associated with Mrs. Lanoux's residence are in the site area, as are a store and outbuildings that were apparently owned by D. Casso. In addition, one outbuilding associated with the Armitage residence is located west of the primary cluster of structures. This last structure may be the stable alluded to by the 1909 map of Darrowville.

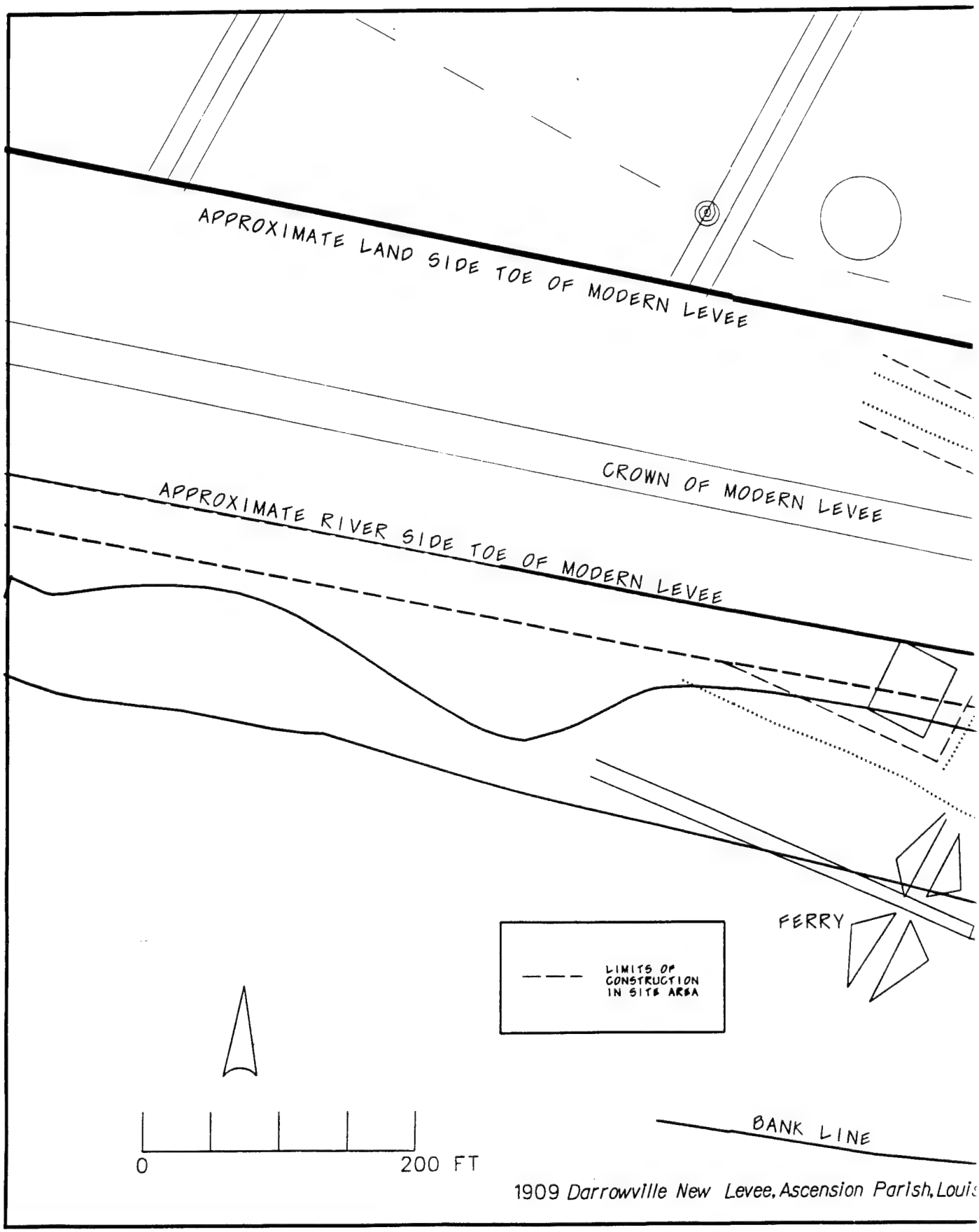
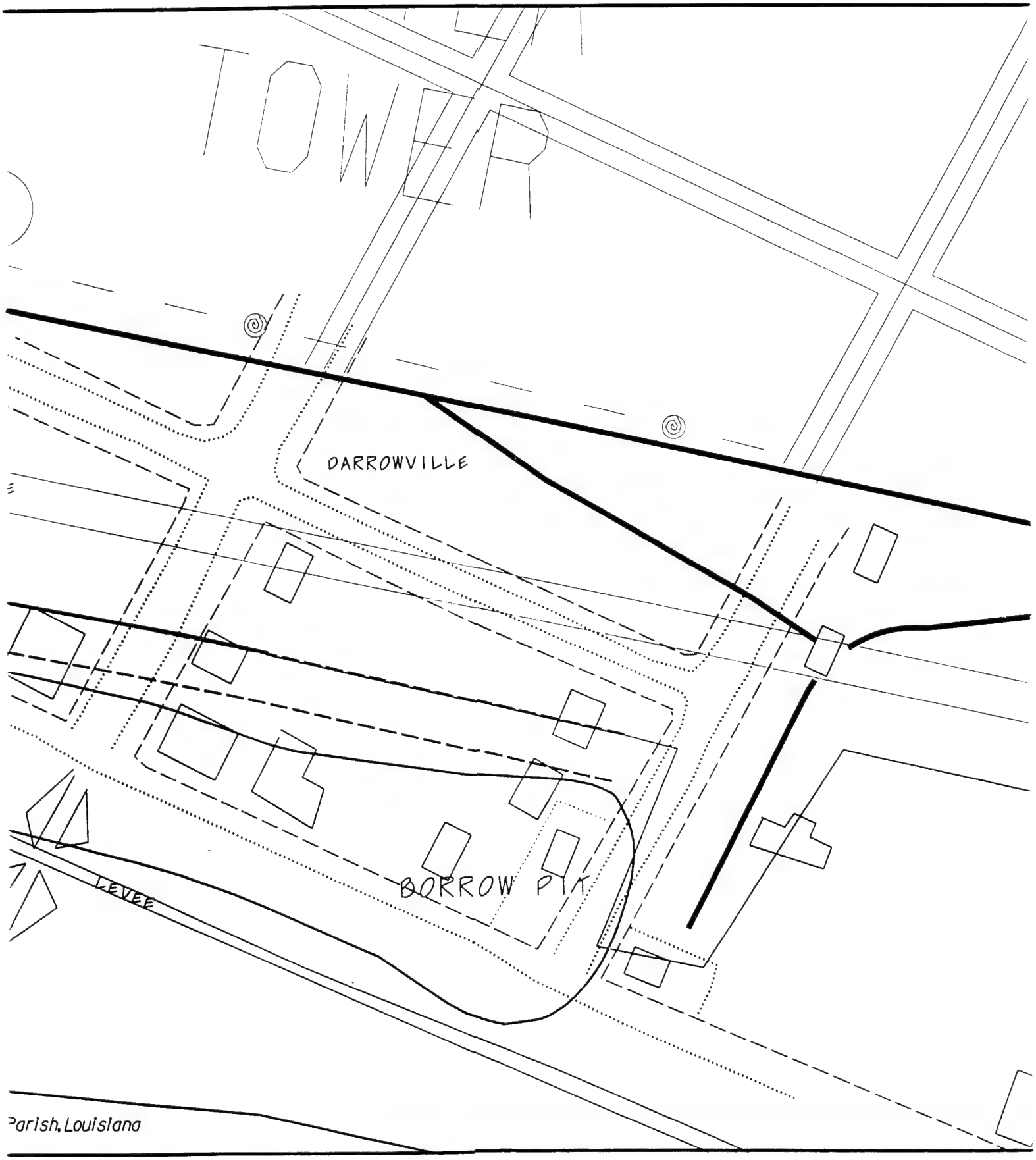
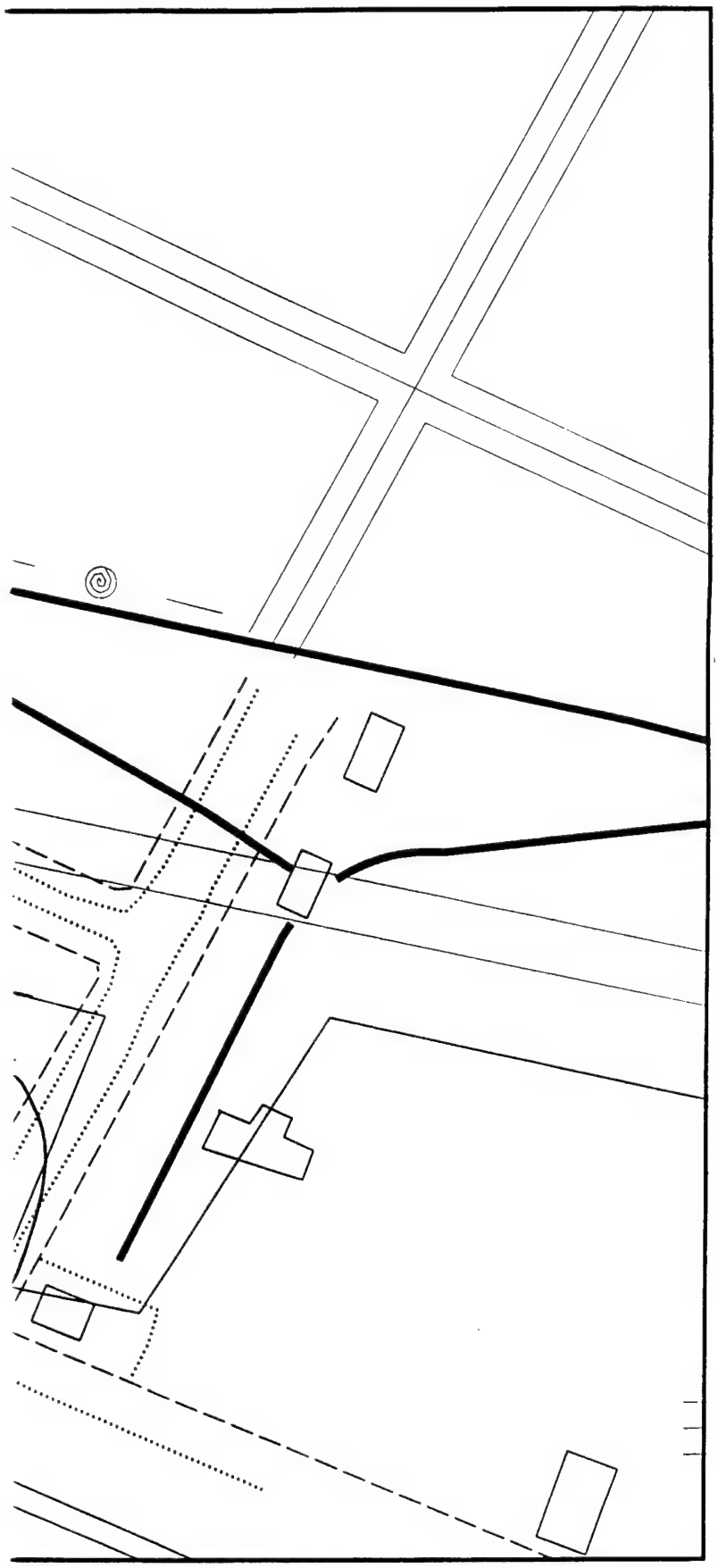


Figure 16. 1909 *Map of Darrowville*
Overlaid onto *Chart No. 36, Missis*



ırrowville New Levee, Ascension Parish, Louisiana.
36, Mississippi River Hydrographic Survey Map.

(2)



(3)

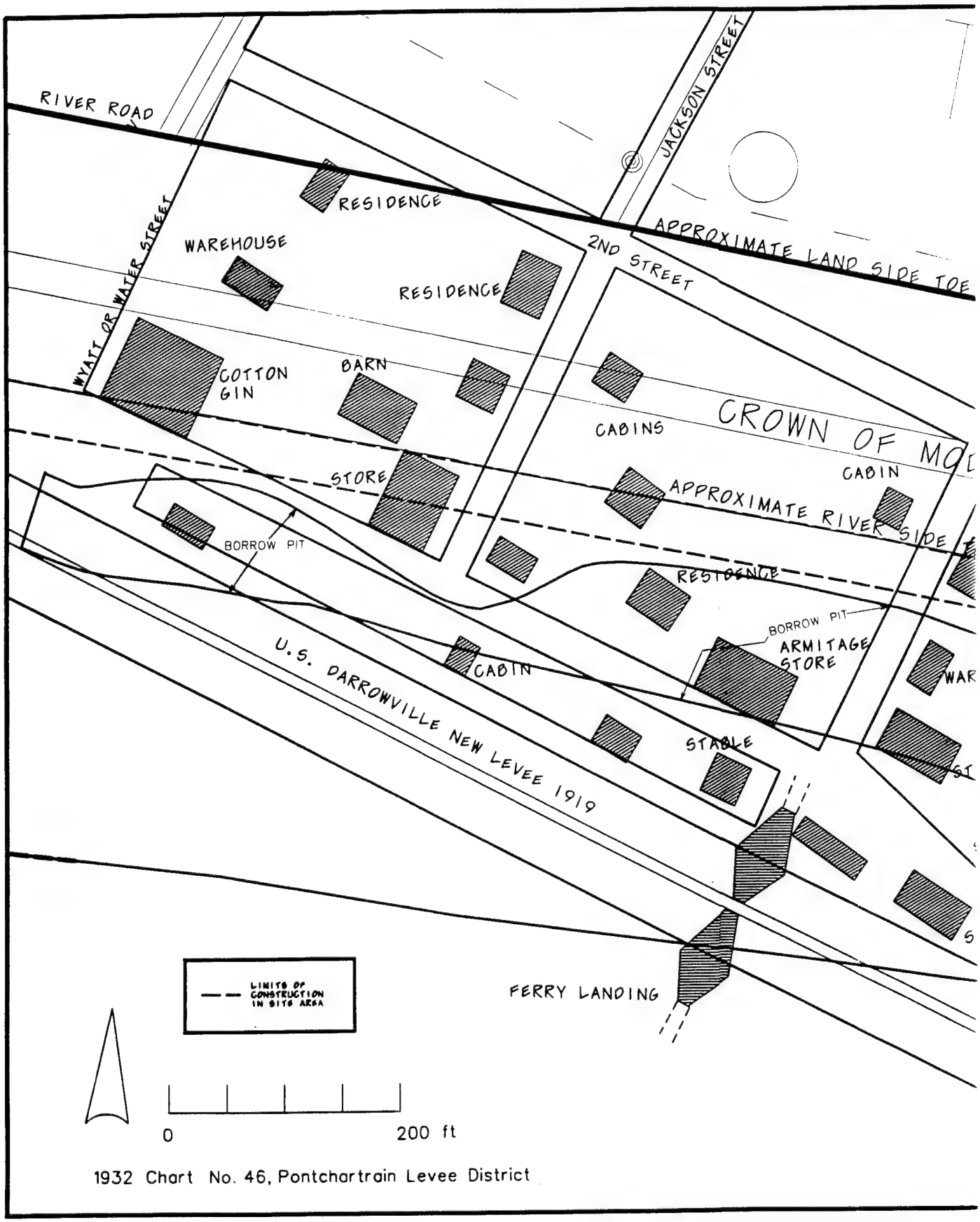
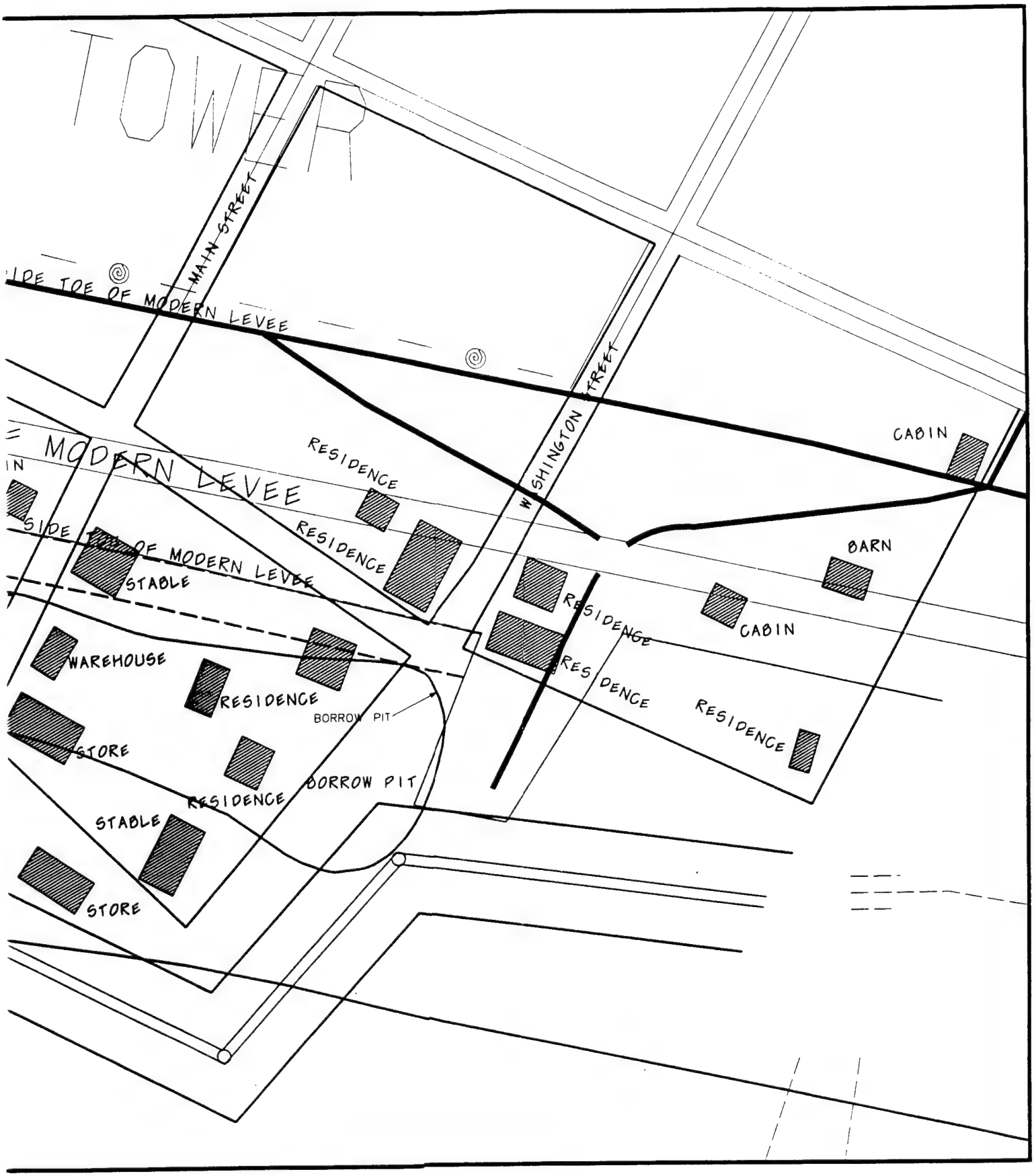
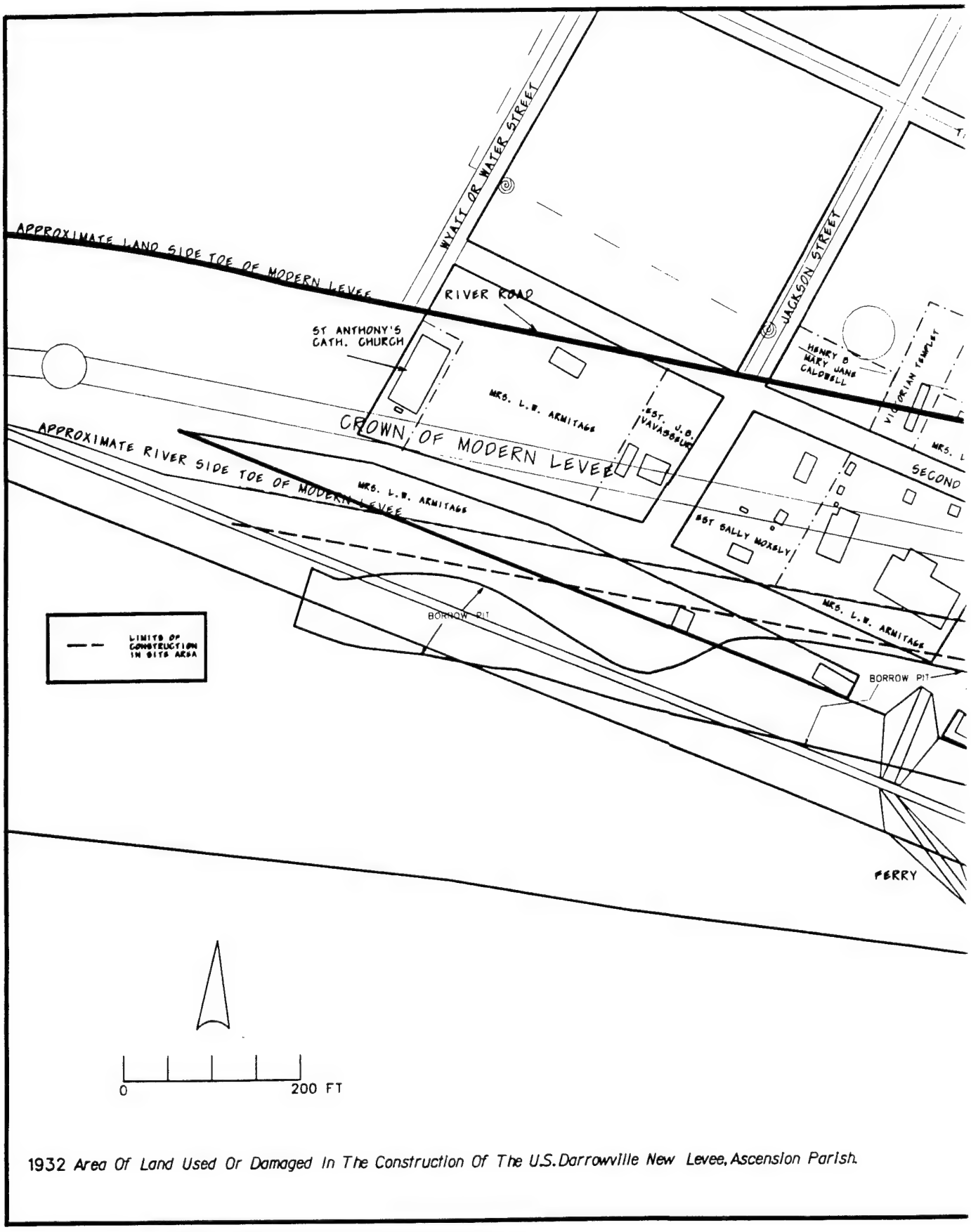


Figure 17. 1932 *Chart No. 46, Pontch*
Chart No. 36, Mississippi River Hyd



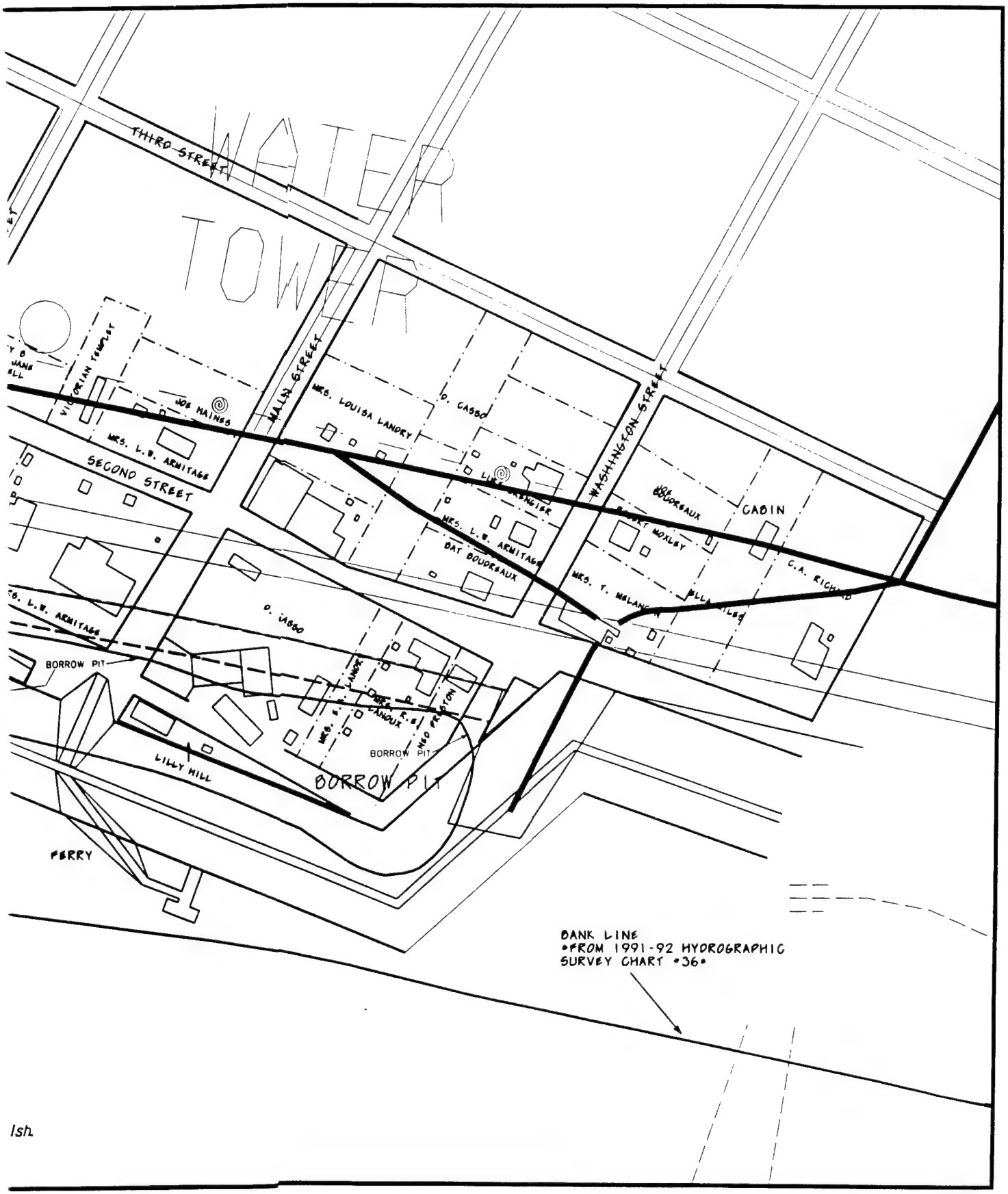
'6, *Pontchartrain Levee District Map*. Overlaid onto
River Hydrographic Survey Map.

(2)



1932 *Area Of Land Used Or Damaged In The Construction Of The U.S. Darrowville New Levee, Ascension Parish.*

Figure 18. 1932 *Map of Area of Land Used*
U.S. Darrowville New Levee, Ascension P
Mississippi River Hydrographic Survey Mc



of Land Used or Damaged in the Construction of the
e, Ascension Parish. Overlaid onto *Chart No. 36,*
phic Survey Map.

CHAPTER 6
PREVIOUS INVESTIGATIONS

G. Harry Stopp, Jr. (1975)

In 1975, G. Harry Stopp, Jr. (1975:1) conducted a "ground survey" of the Donaldsonville plant expansion site for CF Industries, Inc. This area was located on the west bank of the Mississippi River below Donaldsonville on the former Dugas Plantation. In his letter report, Stopp did not describe his approach for assessing potential cultural resources on the Dugas Plantation. The only reference to his methodology was the statement that, "a ground survey was conducted" (Stopp 1975:1). Subsurface testing apparently was not undertaken. No cultural resources were encountered during the survey. His recommendation was that the proper state agencies should be notified if resources were discovered during construction.

J. Richard Shenkel (1976)

J. Richard Shenkel (1976:1) conducted a "comprehensive on-ground survey" of the Smoke Bend Revetment Item for the U.S. Army Corps of Engineers, New Orleans District. The survey covered 4.4 km (14,485 feet) on the right descending bank of the Mississippi River in Secs. 12, 13, 14, 16, 17, 21, 22, 23, 24, 25, 26, 27, 28, and 32 of T11S, R14E. Shenkel's methodology consisted of surficial examination of the exposed cutbank and batture. Shenkel reported that, "close examination of the area did not reveal any surface evidence of cultural materials" (Shenkel 1976:1). Shenkel recommended no further work because no cultural remains were encountered. He also stated that construction workers "should be altered [*sic*] to exercise appropriate pre-cautions" (Shenkel 1976:1).

Robert W. Neuman (1977)

Robert W. Neuman (1977) conducted a background check and survey for the Ascension Parish Sewerage Districts Numbers 2, 3, and 4. Data available from the Division of Archeology did not permit the exact location of this project to be determined. Neuman's approach consisted of "on-the-site survey, via vehicle and on foot, by professional personnel" (Neuman 1977:1). No other methodological details were provided, and subsurface testing evidently was not undertaken. No cultural resources were encountered during survey (Neuman 1977:5).

Burt F. Rader (1978)

Burt F. Rader (1978) conducted a pedestrian survey of the Aben Revetment Area for the U.S. Army Corps of Engineers, New Orleans District. The survey covered 5.2 km (3.23 mi) of revetment right-of-way on the right descending bank of the Mississippi River in Secs. 17, 16, 15, 14, 11, 10, 7, 6, 5, 4, 3, 2, 8, and 1 of T11S, R15E. Rader described his survey as a "transect along the bankline with irregular perpendicular transects back on to the batture spaced approximately every 50-100 meters maximum spacing" (Rader 1978:2). Besides the transect survey, Rader examined "all clear areas, erosion scars, slump areas, dead falls, old barrow pit edges and areas disturbed by construction activity" (Rader 1978:2). Also, Rader reported that, "due to at least one to two feet of relatively recent alluvium, no extensive subsurface testing was implemented" (Rader 1978:2). However, occasional small "cat holes" were made with an entrenching tool into thickly vegetated areas of the batture in the areas of high relief (Rader 1978). These "cat holes" were used to "locate a truncated relief feature or stratum that would yield depositional information or cultural material" (Rader 1978:2).

Rader attributed his negative field results to the active nature of the Mississippi River in the project area (Rader 1978:4). According to Rader, the westward progression of the river would have destroyed any cultural resources (Rader 1978:4). Rader also stated that "the

remains of non-recorded historic structures on the batture, if present, would be obscured by the very recent depositions of alluvium from flood waters in 1973" (Rader 1978:4).

Gregory J. Ducote (1980)

Gregory J. Ducote (1980) conducted a pedestrian survey of the construction area for the replacement of the Bayou Lafourche bridge and approaches on LA 943. The survey area was located on Bayou Lafourche 4.83 km (3 mi) southwest of Donaldsonville in Secs. 106 and 50 of T11S, R14E. The survey methodology consisted of intensive pedestrian investigation along the right-of-way and "all exposed areas including a drainage ditch, road cuts, borrow pit edges, and shorelines" (Ducote 1980:4). Shovel tests measuring 50 x 50 cm to 40-60 cm depth were also excavated. Except for a late-twentieth-century surface garbage scatter, the survey did not record any cultural resources. Ducote reported that, "no sites, prehistoric or historic, will be adversely affected by the proposed project" (Ducote 1980:4).

George J. Castille (1980)

In 1980, the City of Donaldsonville contracted Coastal Environments, Inc., to undertake a survey of a portion of the city for the purpose of preservation planning. Following background archival research, windshield reconnaissance was undertaken. The survey team drove along the city streets photographing representative house types. Not all of the houses were photographed (Castille 1980).

The survey covered over 80 blocks within the city limits. Over 100 structures in excess of 50 years old were noted. Most of these were shotguns, bungalows, and Creole cottages. The majority of the structures that were more than 50 years old were located north of the Texas and Pacific Railroad line, while those that predated 1900 generally were within the developed area of the town shown on the 1884 MRC Map (Castille 1980).

During the survey, Castille (1980:10-13) located the remains of the Union Fort Butler (16AN36). The site evidently was identified by surficial manifestations, since Castille (1980:10) gave no indication that subsurface testing was undertaken. A Creole-type house was built on the site sometime prior to 1922. Two features associated with the fort were located to the southwest of the house. The first feature, located 12 m (39.37 ft) southwest of the house, was an *in situ* brick foundation remnant. No details of the appearance of this feature were provided. The second feature, located 15 m (49.21 ft) southwest of the house, was a partially-filled ditch measuring approximately five ft (1.52 m) deep and 20 ft (6.1 m) across (Castille 1980).

Castille (1980:13-14) recommended that the project area east of Bayou Lafourche and north of the railroad was potentially eligible for inclusion on the National Register as a Historic District. Similarly, he recommended that portion of the project area north of West Seventh Street and east of Magnolia Street on the west side of Bayou Lafourche as potentially eligible as a Historic District.

Kathleen McCloskey et al. (1981)

Coastal Environments, Inc., undertook archeological survey of a proposed coal transfer facility at Bringier Point. Survey, which included pedestrian reconnaissance and limited shovel testing, was only performed along the banks of Bayou Conway and in those areas known to have formerly contained structures associated with Hermitage Plantation (16AN24). Remains of the plantation's quarters and industrial complexes were identified during survey. These resources were evaluated as being potentially eligible for nomination to the NRHP. Avoidance or archeological testing and subsequent data recovery were recommended, as was

assessment of the proposed undertaking on the NRHP listed Hermitage great house (McCloskey et al. 1981).

George Castille and Charles Pearson (1982)

Coastal Environments, Inc., performed survey of those portions of the coal transfer facility that had not been examined during McCloskey et al.'s (1981) study. Survey consisted of 100% pedestrian survey with judgmental shovel testing. One site, which consisted of a scatter of nineteenth- and twentieth-century artifacts, was identified. The site, 16AN33, was evaluated as being ineligible for nomination to the NRHP (Castille and Pearson 1982).

Malcolm K. Shuman and Dennis C. Jones (1985)

Surveys Unlimited Research Associates conducted a Level II cultural resources survey of a pipeline right-of-way for Ford, Bacon, and Davis. The proposed pipeline extended through Iberville, Assumption, and Ascension Parishes. That portion in Ascension Parish was located 4 to 5 miles south of the city of Donaldsonville on Bayou Lafourche. A pedestrian survey via vehicle, foot, and canoe was undertaken. During survey, "the investigators looked for nonconformities, structures, and surface scatters/exposed deposits" (Shuman and Jones 1985:20). Shovel tests were excavated in "high probability locations" (Shuman and Jones 1985:21). No prehistoric or historic resources were encountered in Ascension Parish during the survey.

R. Christopher Goodwin et al. (1985)

R. Christopher Goodwin and Associates, Inc., undertook intensive cultural resources survey of five Mississippi River revetment items in 1984 for the U.S. Army Corps of Engineers, New Orleans District. Only the Marchand Revetment item was in proximity to the study area. The item was located on the left descending bank of the Mississippi River between River Miles 183.8 and 181.5. Transects spaced at 20 m (65.62 ft) intervals with shovel tests excavated every 50 m (164.04 ft) were surveyed. A small brick scatter was recorded. Because the site lacked structural integrity and historical associations, it was evaluated as being ineligible for nomination to the NRHP. However, the remains of the Ashland-Belle Helene Plantation (16AN26) landing were also encountered. The site consisted of a foundation and a brick scatter. Although the site was in poor condition, it was recommended that consideration be given to expanding Ashland's National Register listing to include its archeological resources.

R. Christopher Goodwin et al. (1986)

R. Christopher Goodwin and Associates, Inc., undertook intensive cultural resources survey of three discontinuous segments of the Burnside Revetment area in 1985 for the U.S. Army Corps of Engineers, New Orleans District. The survey areas were located between River Miles 165 and 172 on the left descending bank of the river. Transects spaced at 20 m (65.62 ft) intervals with shovel tests excavated every 50 m (164.04 ft) were surveyed. No archeological sites were encountered during the survey (Goodwin et al. 1986).

R. Christopher Goodwin et al. (1989)

In January 1989, R. Christopher Goodwin and Associates, Inc., returned to 16AN26 to conduct archeological test excavations at the foundation and brick scatter identified during the 1984 survey (Goodwin et al. 1989). Six units were excavated in the vicinity of the foundation. These, in combination with the results of 65 shovel tests and probing, demonstrated that the surviving portions of the foundation were about 12 x 12 m (39.37 x 39.37 ft). Historical

research confirmed that this was the remains of the Ashland warehouse. While acknowledging that warehouses were potentially significant cultural resources, Goodwin et al. (1989:56) stated that the locale lacked integrity, and therefore had little further research potential. No further work was recommended here.

In addition, 11 shovel tests and two units were excavated within the brick scatter. The scatter was determined to be a twentieth-century deposit which lacked integrity. One additional unit was excavated adjacent to the remains of an old levee. This unit yielded twentieth-century fill, but no intact features or deposits (Goodwin et al. 1989:42, 44). Because it was determined that additional investigations at these two locales would not recover important data, no further work was recommended. Finally, on the basis of the lack of research potential of all three locales, Goodwin et al. (1989:56) recommended that the National Register boundaries for the Ashland-Belle Helene property not be changed to include the batture.

David Babson (1989)

Archeological research at Ashland-Belle Helene Plantation was conducted in 1989 to assess the integrity and research potential of the plantation grounds and to determine if they should be listed on the National Register in their own right as a significant archeological site. Thirteen text units were excavated, focusing on the principal outbuilding near the great house and on the slave/workers quarters. This work resulted in the recovery of 22,781 artifacts and the identification of 15 features (Babson 1989:ii, 6).

Research goals were to test a former two-story outbuilding, designated the north flanker and of unknown function, located northeast of the great house, and to locate, test and distinguish the pre-1884 and the 1911 slave/workers quarters. A main datum point marking the 0N/0E point of the site excavation grid was established at the southwest corner of the Ashland-Belle Helene great house. The basic text units were either 1 x 2 m (3.28 x 6.56 ft) or 2 x 2 m (6.56 ft x 6.56 ft). Three units were placed at the outbuilding, and ten units were placed in pairs at the location of the quarters. Field results confirmed that 16AN26 possessed both integrity and research potential. It was recommended that the National Register listing be expanded to include the archeological resources of the plantation (Babson 1989).

David B. Kelley (1989)

Coastal Environments, Inc., conducted archeological investigations of four revetment items located on the Mississippi River for the U.S. Army Corps of Engineers, New Orleans District. The Aben and Marchand Revetment Areas are both in the vicinity of the present project area. Kelley's research plan for the survey combined archival investigations and deep subsurface testing. During field survey, a grid was established in each of the revetment areas. The grid was described as a "baseline laid out along the riverbank and lines perpendicular to it extended to the levee or the limit of the right-of-way" (Kelley 1989:33). Kelley stated that the riverbank was examined by "intensive survey" (Kelley 1989:33), and that the rest of the revetment area was investigated using shovel or auger tests at 50 m (164.04 ft) intervals along 20 m (65.62 ft) transects. Auger tests were used in areas where overburden was deemed greater than 50 cm (19.68 in) (Kelley 1989).

Although no prehistoric remains were encountered within the Aben Revetment Item area, three historic sites (16AN42, 16AN43, and 16AN44) were documented. The Dugas Plantation Site (16AN42) is located one mile (1.609 km) downriver from the City of Donaldsonville. This large, multicomponent site included intact late-nineteenth-century rice flumes. One of these irrigation structures was made out of wood, and the other was of iron pipe. A concrete foundation and a buried layer of brick rubble were also noted. Surface scatters indicated at least two periods of occupation: early- to mid-nineteenth century and late-nineteenth to

early-twentieth century (Kelley 1989:115-123). The site was recommended as ineligible for inclusion on the National Register of Historic Places (Kelley 1989:134-135).

16AN43 is located 0.4 km (0.25 mile) downriver from 16AN42 on Stella Plantation (Kelley 1989:123-131). The site consisted of the *in situ* structural remains and cultural deposits of a nineteenth-century sawmill. Features included two large concrete foundations and the remains of a wooden structure. Kelley (1989:135) recommended additional excavations to determine its National Register eligibility.

16AN44 is located one mile downriver from 16AN43. The site consists of a large, L-shaped, concrete machinery foundation. Kelley suggested that the feature, which had no associated cultural deposits, was the foundation for a steam engine formerly attached to the Riverside Plantation warehouse. The site was evaluated as ineligible for inclusion on the National Register of Historic Places (Kelley 1989:131-135).

Six historic sites were identified inside the Marchand Revetment project area. 16AN45 was identified as a small scatter of historic artifacts interpreted as a late-nineteenth/early-twentieth-century sheet midden (Kelley 1989:81). The site was evaluated as ineligible for inclusion on the National Register of Historic Places (Kelley 1989:131-135). 16AN46 consisted of two cut granite blocks and a scatter of barbed wire that appeared to have been redeposited. Like 16AN45, it was judged ineligible for nomination to the NRHP. (Kelley 1989:131-135).

Sites 16AN47, 16AN48, 16AN49, and 16AN6 all consist of buried nineteenth- and/or twentieth-century sheet midden. All of the sites were evaluated as having limited research potential. All were evaluated as being ineligible for nomination to the NRHP (Kelley 1989:131-135).

Bryan Guevin (1990)

Coastal Environments, Inc., performed intensive archeological survey of a 3.5 acre tract south of the town of Geismar for the plant expansion of the Liquid Carbonic Specialty Gas Corporation facility. Because all but the extreme northeastern portion of the project area was being used for disposal or contained standing water year round, shovel testing was deemed unnecessary in the majority of the area. Fifteen randomly-placed shovel tests were excavated in the northern part of the project area. No archeological resources were encountered.

Stephen Hinks et al. (1994)

In 1992, R. Christopher Goodwin and Associates, Inc., conducted a Phase I archeological survey of the St. Elmo and Smoke Bend Revetment project areas for the U.S. Army Corps of Engineers, New Orleans District. The Smoke Bend survey area was located on the right descending bank of the Mississippi River between River Miles 179.1 and 178.5 (Hinks et al. 1994:51). The St. Elmo Revetment project area was located on the left descending bank of the Mississippi River between River Miles 179.1 to 173.0.

Using Mississippi River Commission Charts, it was determined that there were only 40 acres of land within the Smoke Bend Revetment Item that pre-dated 1921. Therefore, it was decided that a regime of subsurface testing would be implemented for these 40 acres. The survey grid was composed of two separate baselines at each end of the project area. These baselines were perpendicular to the Mississippi River and the mainline levee (Hinks et al. 1994).

Baseline "A" was placed downriver, and it contained four transects paralleling the levee. Baseline "B" was established upriver and contained one transect between the levee and the existing borrow pit, and eleven transects between the borrow pit and the Mississippi River. The survey transects were spaced 20 m (65.62 ft) apart. There were a total of 144 shovel tests (30 x 30 x 50 cm) (11.81 x 11.81 x 19.69 in) excavated every 50 m (164.04 ft) along each transect lane (Hinks et al. 1994). Additionally, five auger tests were excavated 20 to 25 m (65.62 to 82.02 ft) from the riverside levee toe near the 1880s Mississippi River bankline. The auger tests, which measured 6 cm (2.36 in) in diameter, were excavated to a depth of two meters (6.56 ft) to test for buried cultural deposits. No prehistoric artifacts were recovered, but modern refuse was observed, particularly in the vicinity of the McManor Light. A cobalt Milk of Magnesia bottle was the only diagnostic artifact recovered. No archeological sites were identified (Hinks et al. 1994:53).

Survey of the St. Elmo Revetment area included excavation of shovel tests at 50 m (164.04 ft) intervals on 5 transects spaced 20 m (65.62 ft) apart. Only one site, Darrow (16AN54), was found as a result of this survey (Hinks et al. 1994:55). Background research undertaken by Hinks et al. (1994:29-36) indicated that the first European occupants of the area were Acadians who established small, self-sufficient farms during the Spanish colonial period. During the latter part of the eighteenth century and early-nineteenth century, the economy of the area shifted first to cotton then to sugar cane production, and the farmsteads were consolidated into large plantations. By the end of the nineteenth century, many plantations ceased to function, and the growth of small towns and villages on old plantation lands began (Hinks et al. 1994:29-36).

A search for early maps depicting the Darrow area was unsuccessful (Hinks et al. 1994:46), but the 1883 Mississippi River Commission survey, the 1921 survey, and the U.S. Army Corps of Engineers caving banks maps indicated that the original community plan for Darrow was extant until the 1932 levee setback, when the village lost all or portions of several riverside blocks. Hinks et al. (1994:46-50) anticipated that deposits associated with Darrow would be located on the batture between the ferry landing and the upriver edge of the extant town. They suggested that deposits would date between 1878 and 1932, representing the temporal span from when the town was established until portions of it were razed prior to levee construction. Finally, they did not anticipate that remains directly associated with the ferry landing would be intact, since that area has been extensively disturbed by the construction and subsequent use of this area by Cooper T. Smith Company (Hinks et al. 1994:46-50).

A total of 95 shovel tests were excavated in the Darrow site area (Figure 19). One was positive, but it was located outside the site limits. Thirty-four judgmentally placed auger tests were subsequently excavated in order to delineate archeological resources associated with the town of Darrow. The auger tests indicated that cultural deposits are located between 45-100 cm below ground surface. These auger tests demonstrated the site lies between the levee and the borrow pit and extends from the Cooper T. Smith yard for 350 m (1148.28 ft) upriver (west), covering an area approximately 2.2 ac. The two 1 m^2 units confirmed the presence of cultural deposits associated with the town of Darrow. They also indicated that the historic deposits are capped by up to 50 cm of modern alluvium. Based on their field data, Hinks et al. (1994) concluded that the batture remains of the site lie in a 25 m (82.02 ft) wide band between the levee and a borrow pit. Deposits located north of that area were destroyed or covered by levee construction, while deposits located to the south of this band were destroyed by excavation of the borrow pit. They stated that the deposits located below the recent alluvium date from the first half of the twentieth century, which is consistent with the known development of the town of Darrow. They concluded that the deposits are associated with the

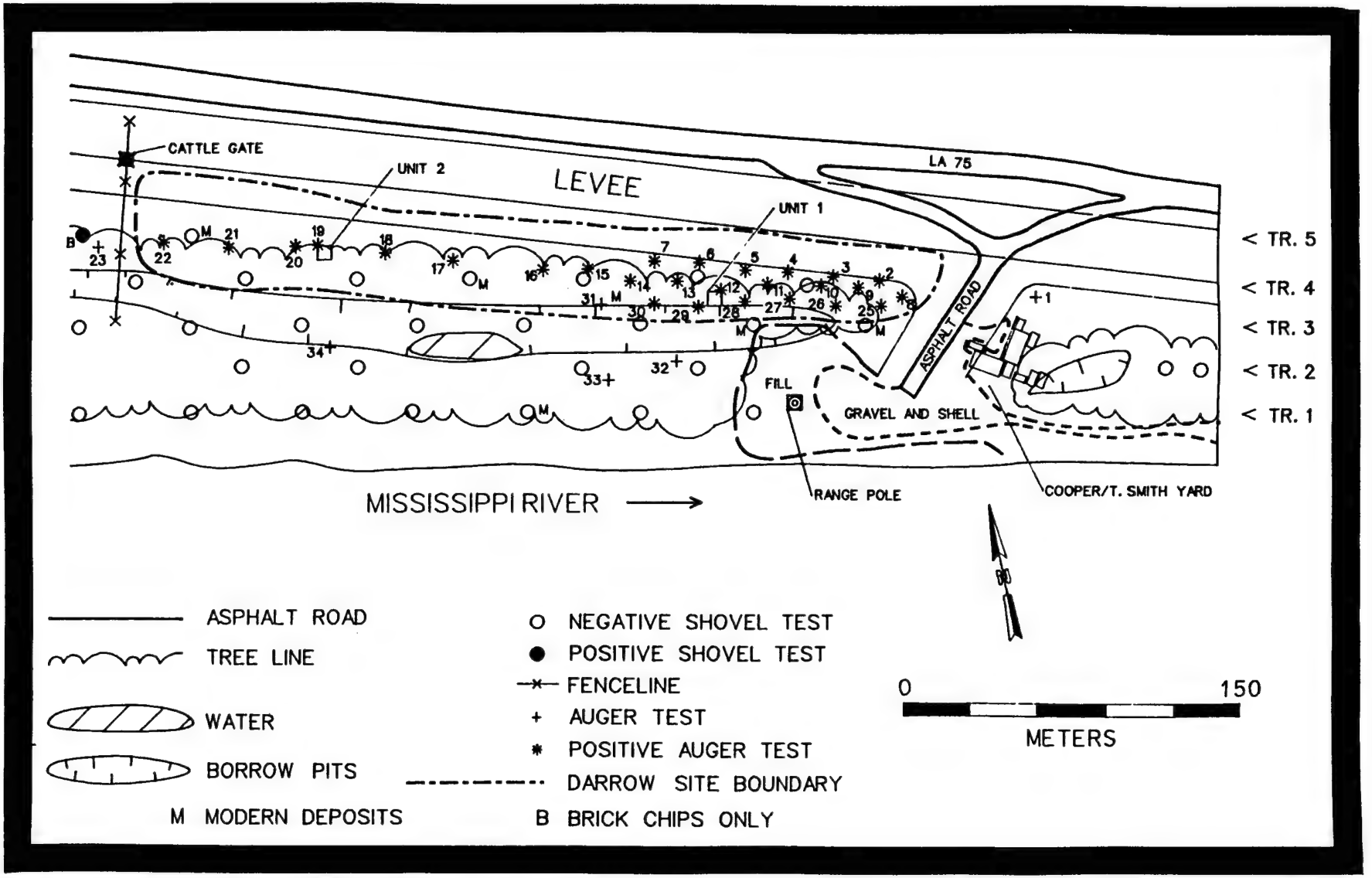


Figure 19. Darrow Site (16AN54) Level I Archeological Investigations (after Hinks et al. 1994).

three blocks located at the southern end of the town prior to being destroyed by levee construction in 1932 (Hinks et al. 1994:53-76).

Based on the results of their field investigations, Hinks et al. (1994) suggested that much of the site had been extensively damaged by levee construction and borrow pit excavation. No *in situ* features were identified at the site, however, insufficient testing was conducted to ascertain whether or not important features or deposits are present. They suggested that probable features and deposits contained within the site included foundation remains, wells, privies, postholes, road remains, and refuse deposits. Therefore, they concluded that the site was a potentially significant cultural resource, and they recommended NRHP test excavations (Hinks et al. 1994:67).

Hakon Vigander et al. (1994)

In 1993, Earth Search, Inc., conducted archeological survey in two areas within Item M-178.0 to 173.2-R. Auger tests to a depth of 2 m (6.56 ft) spaced at 50 m (164.04 ft) intervals were excavated along the toe of levee between Levee Stations 0+00 and 50+68 within the Lafourche Basin Levee District. In addition, auger tests to a depth of 2 m (6.56 ft) were excavated at 35 m (114.83 ft) intervals within a proposed borrow area located within the boundaries of the Atchafalaya Basin Levee District between Levee Stations 6168+00 and 6188+00. A total of 104.75 acres were surveyed, and 65 auger tests and four shovel tests were excavated. No archeological sites were located in either of the two survey areas, and no further work was recommended.

Jill-Karen Yakubik et al. (1994) and Benjamin Maygarden et al. (1994b)

In 1992 and 1993, Earth Search, Inc., undertook archeological data recovery at Ashland-Belle Helene Plantation under contract to Shell Chemical Company. Initially, the entire 102 acre tract was shovel tested at gridded 30 m (98.42 ft) intervals. Subsequently, shovel tests at gridded 15 m (49.21 ft) intervals were excavated over a portion of the planned development area. Based on the results of these shovel tests, two cabin sites were selected for data recovery. The cabin sites were crossed by two intersecting, perpendicular trenches each measuring approximately 30 m (98.42 ft) in length. Following excavation of the trenches, an additional 30 1 x 1 m units were placed judgmentally at each of the cabin sites. A total of 89 1 x 1 m units were excavated at each of the two cabin sites. In addition, archeological monitoring was conducted in those areas of the construction zone which contained surface features and yielded subsurface artifacts during field survey. Eighteen cabin sites were identified within the quarters complex, at least fifteen of which were double cabins. A large volume of historic artifacts were recovered including 33,653 items from Cabin 1 and 16,963 items from Cabin 2. The bulk of the material consisted of refined white earthenware sherds and bottle glass fragments. The faunal sample contained a total of 5,572 identifiable bone fragments, representing both wild and domestic species. Archeological evidence indicates that the cabins were in continuous use from the time they were built ca. 1840 until they were individually abandoned in the late-nineteenth/early-twentieth century (Yakubik et al. 1994).

In addition, a portion of the planned development area corresponding to the former industrial complex of the plantation was gridded and shovel tested at 15 m (49.21 ft) intervals. A backhoe was utilized to remove the majority of the soil from the sugar house foundations, and final cleaning of features for documentation was undertaken by hand. Fifty-nine trenches were excavated, and 80 features were designated. These permitted the identification of the principal structural elements of the sugar house and a reconstruction of functional areas within the building. A conjectural reconstruction of the location of major elements of steam-generating and sugar processing machinery within the structure was made on the basis of archeological data recovery (Maygarden et al. 1994b).

CHAPTER 7
FIELD INVESTIGATIONS

Introduction

In order to concentrate excavations in areas most likely to contain cultural resources, proton magnetometer survey was undertaken to attempt to locate structural remains within the site limits. Subsequently, both backhoe trenching and hand excavation were performed to determine not only the nature of the proton magnetometer signatures but to explore their depositional contexts. These methods and the results of their application are described below.

Field Methodology for NRHP Testing

The site area was mapped with a transit, and a grid system was laid out to provide horizontal control. An arbitrary point, N200 E000, was established just outside the western site boundary at the toe of the modern levee. Three initial east/west lines (N200, N196, N192) were staked at 10 m intervals to provide horizontal control for magnetometer survey and archeological investigations. These east/west lines were each 370 m in length. All relevant natural and cultural features were mapped. The site map and grid were tied to PLMS 237, located at levee traverse station 2694+4.49, and traverse station markers 2700+00 and 2710+00 (Figure 20).

Magnetometer survey was undertaken within the site area in order to ascertain if any of the structures depicted on the historic maps could be identified by this methodology. The site area was divided into four blocks. Blocks 1-3 were each 100 m long, while Block 4 was 50 m long. Additional east/west lines were established at N198, N194, N190, N188, and N186. The last two lines were not continuous due to the heavy upperstory vegetation along the edge of the borrow pit and the configuration of the borrow itself. The N196 line was utilized as an east/west control for the magnetometer survey. Additional control lines (north/south) were established at the end of each block in order to mitigate diurnal changes (Garrison 1996:27). Readings were taken every meter along the east/west grid lines in the four blocks. All readings were transferred to the site grid, and magnetic contour lines drawn. A total of 40 magnetic anomalies or anomaly clusters were identified. Twenty-one of these are located within 6 m of the toe of the modern levee. Because levee stability could be affected by subsurface archaeological investigations, no excavations could be undertaken within 6 m of the levee toe (Scope of Services, Appendix I). Thus, only 19 anomalies or clusters of anomalies could be examined archeologically during test excavations (Figure 21).

The magnetic contour map was overlaid on the 1909 and two 1932 maps of Darrow using CAD (Figures 22-24). Based on correlation between the magnetic contour map the 1909 map (Figure 22) and the 1932 new levee construction map (Figure 24), five backhoe trenches were planned (Figures 25-27). These trenches investigated three dipolar anomalies which did not correspond to any known structures in the site area and two anomaly clusters which corresponded to a store and a residence owned by D. Casso and Mrs. R.E. Lanoux, respectively. Trench 1 was placed between N192 E10 and N192 E25 to investigate a linear dipolar anomaly. Trench 2 was placed between N194 E75 and N194 E85 to investigate a strong dipolar anomaly. Trench 3 was placed between 194 E120 and N194 E130 to investigate a diffuse dipolar anomaly. Trench 4 was between N194 E270 and N194 E285 to investigate the store location, while Trench 5 was placed between N194 E335 and N194 E350 to investigate the residence (Figures 25 and 28).

It will be noted that a relatively lengthy gap exists between the placement of Trenches 3 and 4 (Figures 25 and 28). Excavation was not conducted in this area for two reasons. Although the 1909 map indicates that a structure may have been located in this area, the function

of that structure is unknown. Given the limited nature of the planned testing, it was felt that the efforts were better directed toward areas of known function because the interpretation of data from such areas might be expected to be more meaningful. Then too, only relatively minor magnetic signatures were obtained in this area (Figures 21 and 28). Because there was no strong indication based on the magnetometer results that subsurface remains were preserved in this area, and because the function of the suspected structure is unknown, the decision was made not to place an excavation trench in this portion of the site.

Before any soil was removed from the backhoe excavated trenches, a Schonstedt™ GA-52Cx audible magnetic locator was swept along the length of the trench in an attempt to more accurately define the potential source of the magnetic signature. Soil was then removed from the trenches in levels no greater than 20 cm thick. Backhoe excavation was halted when cultural materials were encountered. The floor of the trench was trawled and then photographed. Trench excavation continued if the cultural materials did not derive from an undisturbed context. Trench excavation ended when the projected toe of the modern levee was encountered or when sterile subsoil was revealed, whichever came first. The projected toe of the levee was determined using a 1:3 feet ratio; that is, the toe would be located 1 ft below ground surface (vertical) for every three feet traveled horizontally from the southern edge (toe) of the levee. Because the stratigraphy within each of the trenches was uniform, only representative profiles of the trench walls were drawn before backfilling.

When intact cultural deposits or features were encountered, backhoe excavation was halted, and the trench floor was trawled and photographed. Subsequently, 1 m^2 excavation units were laid out to investigate the cultural deposits or features. These hand excavation units were designated by the grid coordinate in their northeastern corners. Unit or local data were established for each unit and were set 10 cm above ground surface. Hand excavation proceeded in 10 cm levels within the natural and/or cultural strata. Soils removed from these units were dry-screened through 1/4" mesh, and five 10 liter soil samples were judgmentally collected from culture bearing strata for laboratory flotation. Plan views were drawn at the base of each level, and photographs were taken. Two walls of each excavation unit were drawn and photographed after work was completed; the stratigraphy within these units is representative of that seen in the immediately adjacent trenches. In order to ensure that no other cultural deposits lay below those investigated, a bucket auger test was excavated to a depth not exceeding 1.5 m below local datum.

Results of the Investigations

Trench 1 is located between N192 E10 and N192 E25 and is 70 cm wide (Figures 25 and 29). It was excavated to a depth of 90 cm. The Schonstedt™ sweep indicated at least two horizontally discreet sources associated with the linear signature were present in the trench area. A metal fence post (0-5 cm) and a small accumulation of burned cultural material (0-15 cm) were discovered in Stratum I, a 10YR 4/1 (dark gray) silty clay. Analysis of the small accumulation of cultural material indicates the vast majority of items were either aluminum pull tabs or can fragments, dating the deposit to the mid-1960s (see Chapter 8).

A thin, discontinuous layer of brick fragments was observed between 45-53 cm below ground surface in Stratum X of Trench 1. This stratum was a 10YR 3/3 (dark brown) clay loam matrix. Trawling of the trench floor indicated that the brick fragments were neither *in situ* nor were they located within a midden deposit.

A representative profile of the stratigraphy within Trench 1 is presented in Figure 29. Stratum I consisted of a 10YR 4/1 (dark gray) silty clay that extended to about 10 cm below surface. Beneath this was a 10YR 5/1 (gray) to 10YR 3/2 (dark grayish brown) silty clay

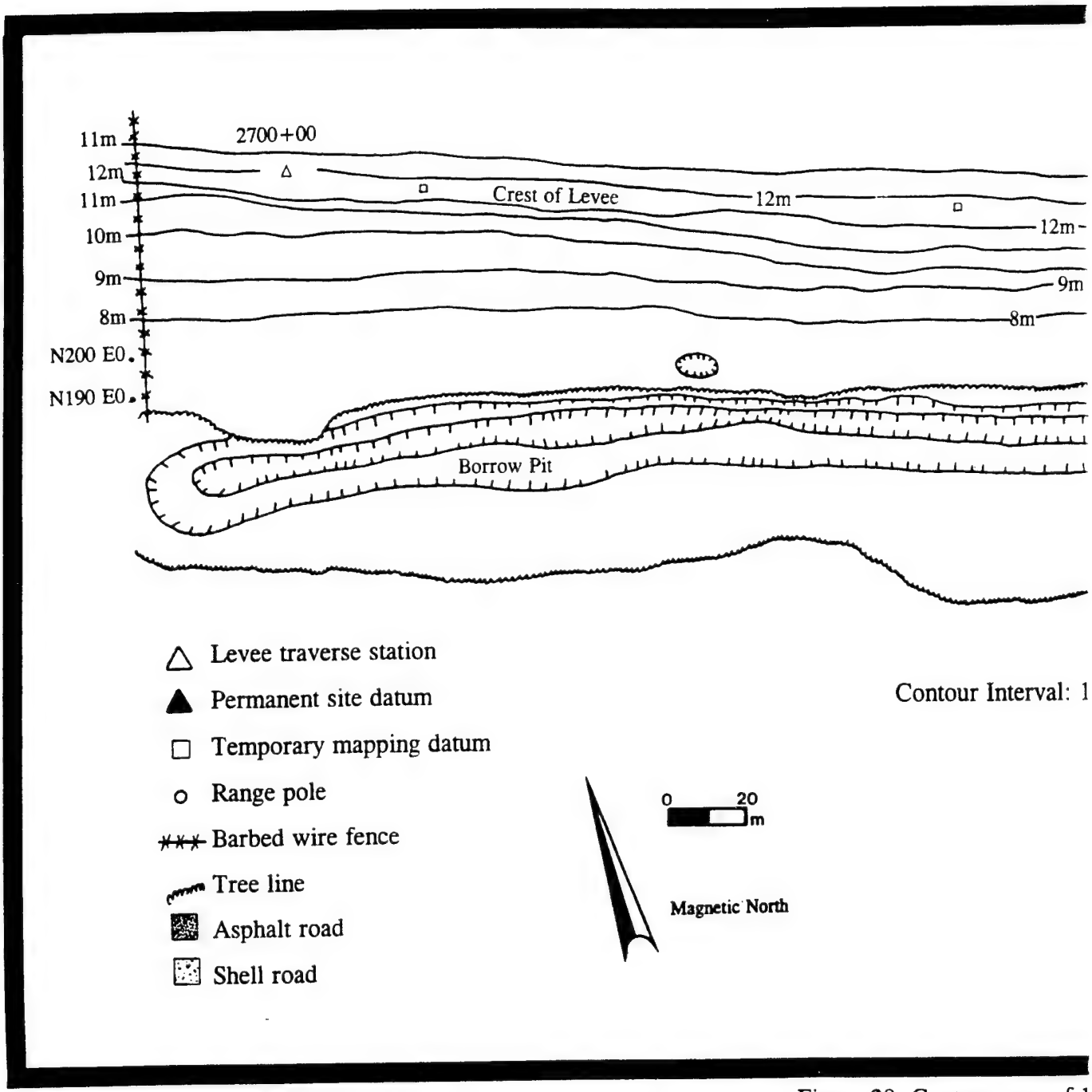
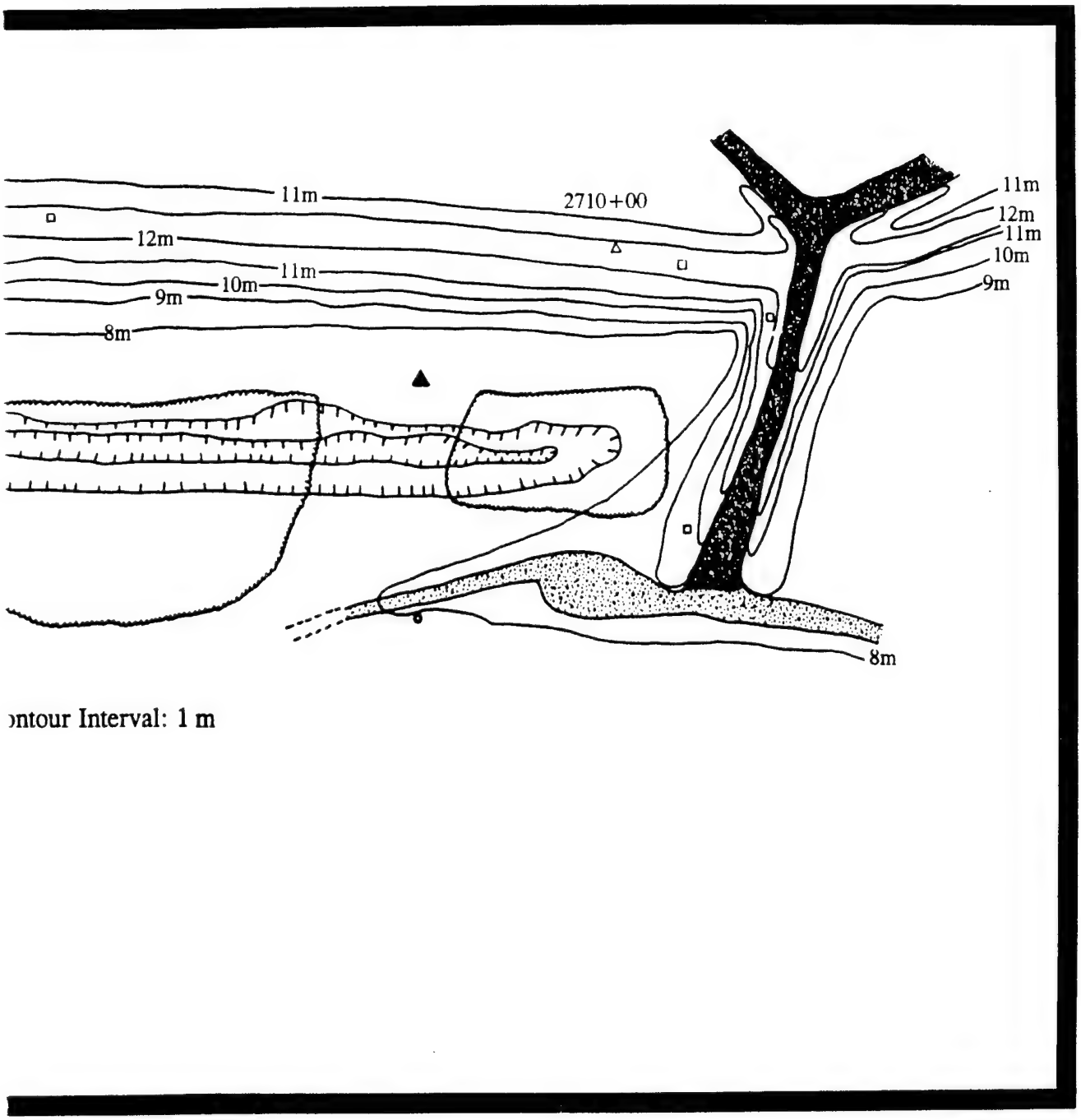


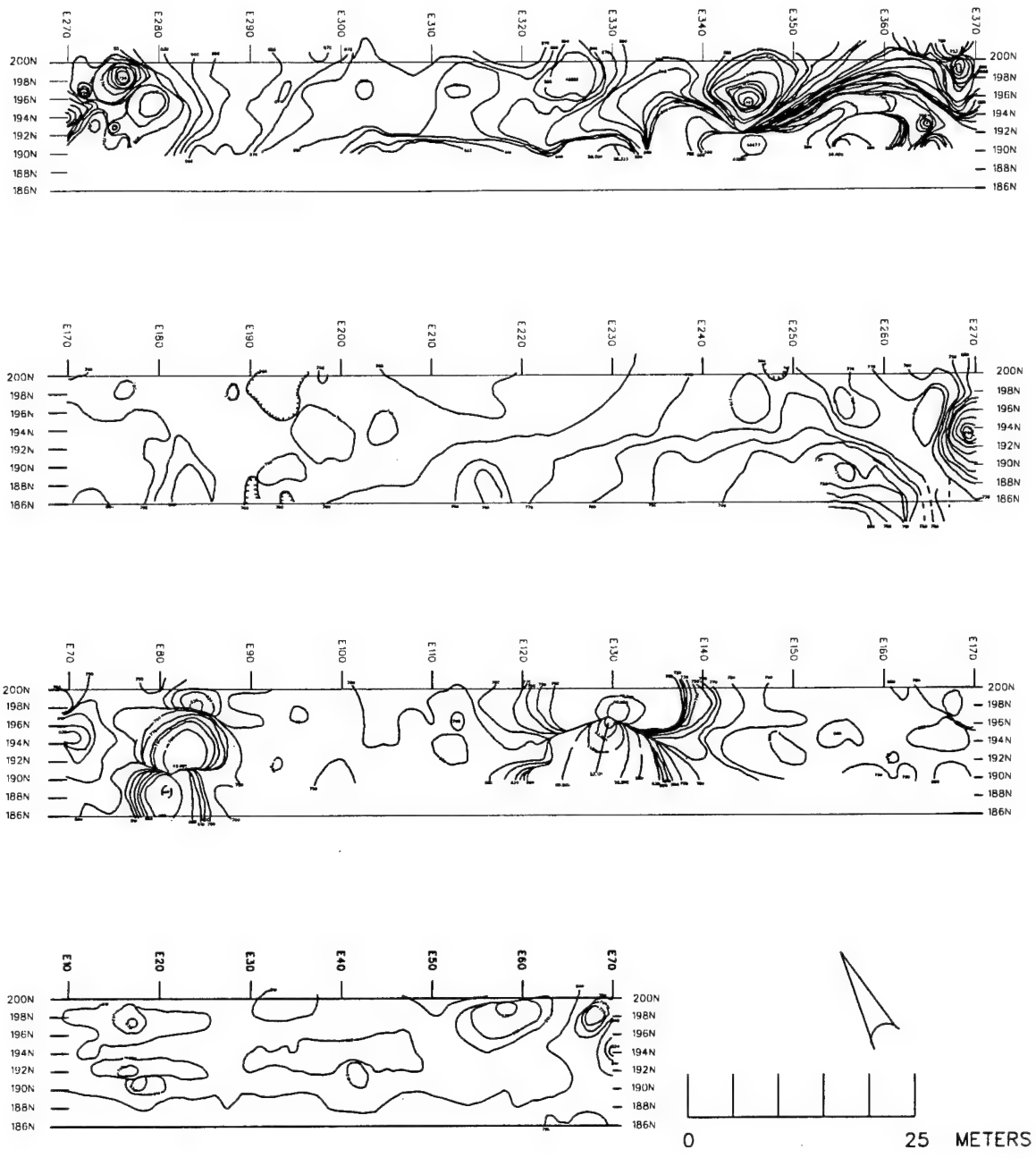
Figure 20. Contour map of 1



ontour Interval: 1 m

Contour map of 16AN54.

(2)



MAGNETOMETER CONTOUR MAP

Figure 21. Magnetic contour map, 16AN54.

This Page Intentionaly
Left Blank

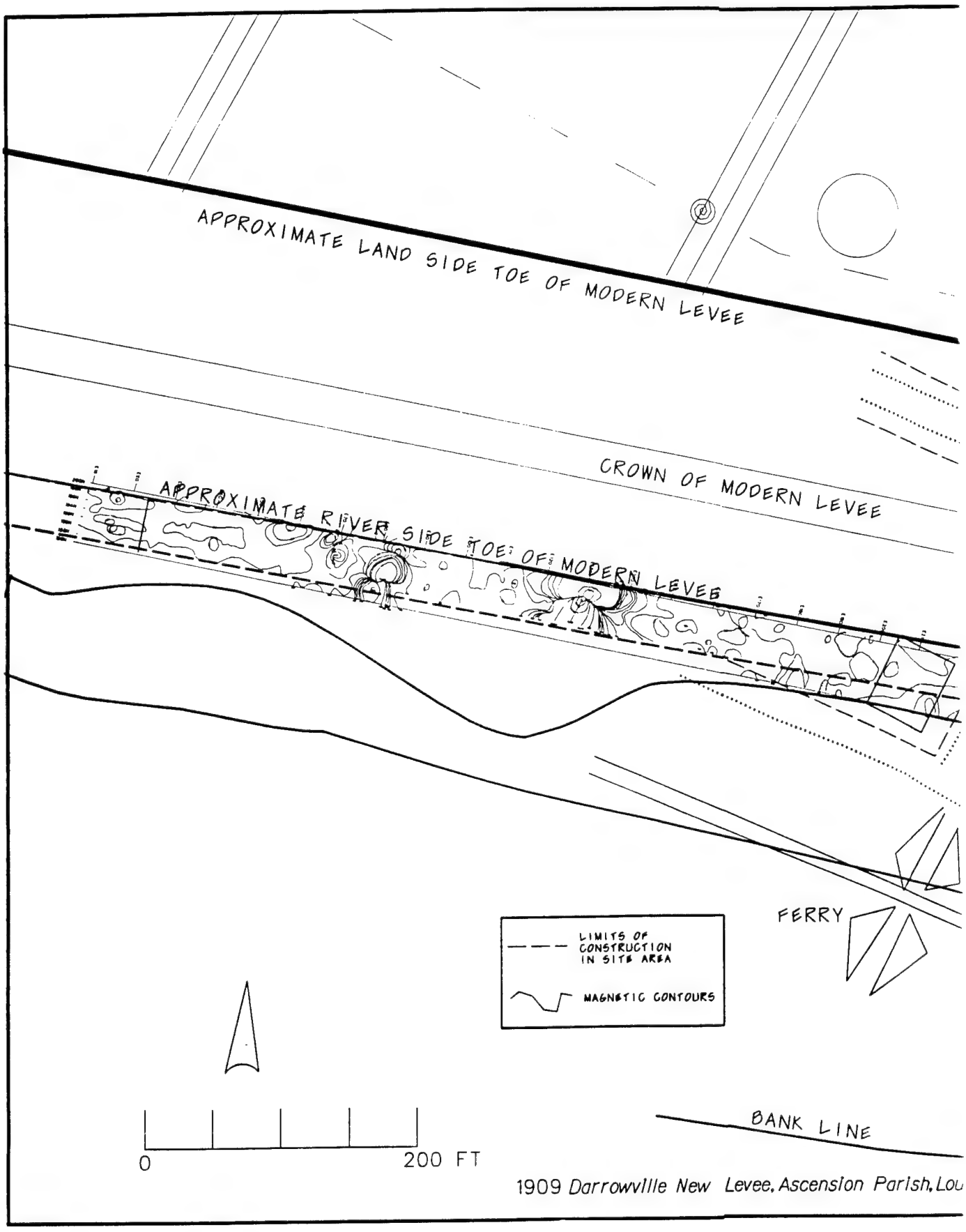
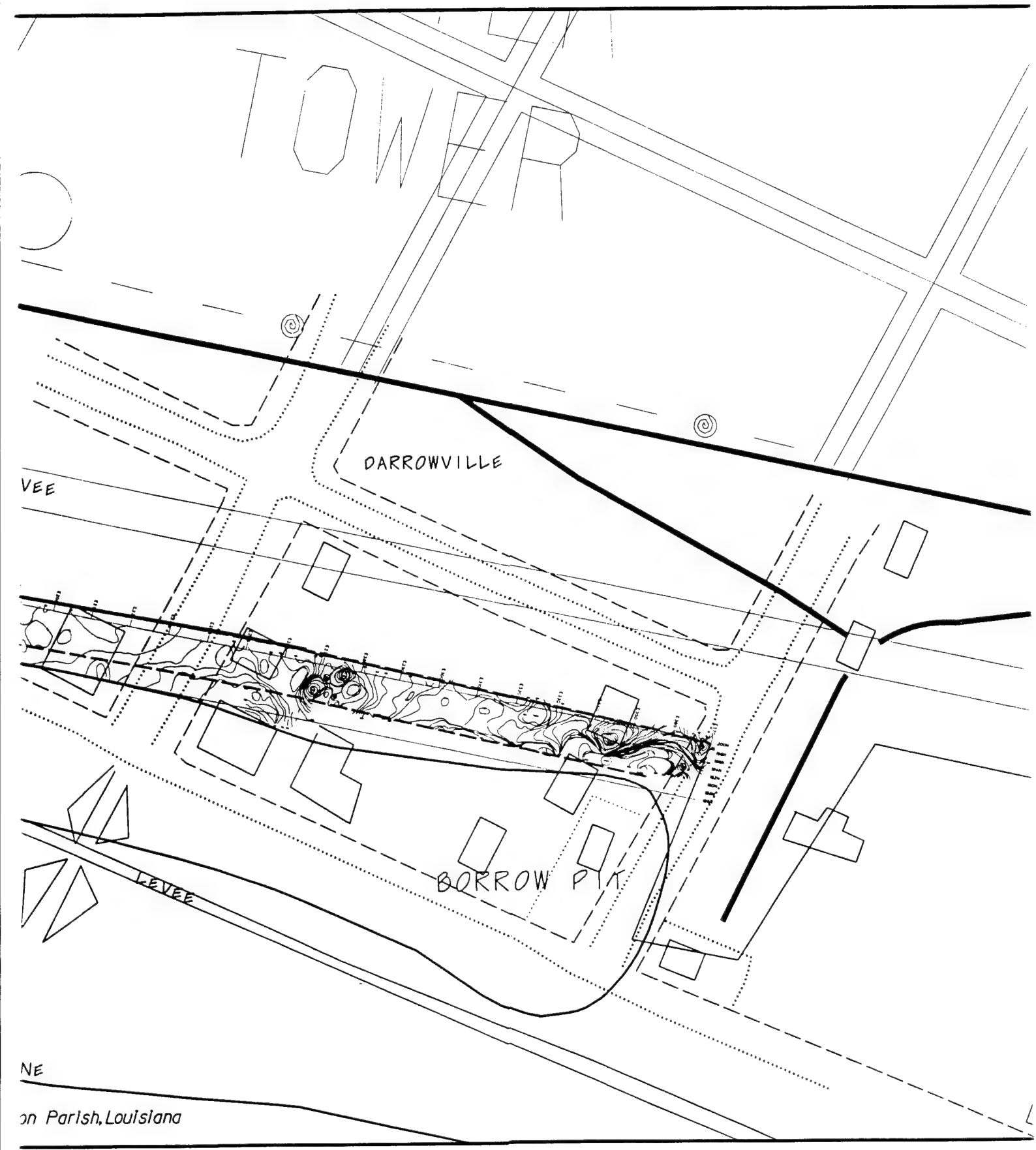
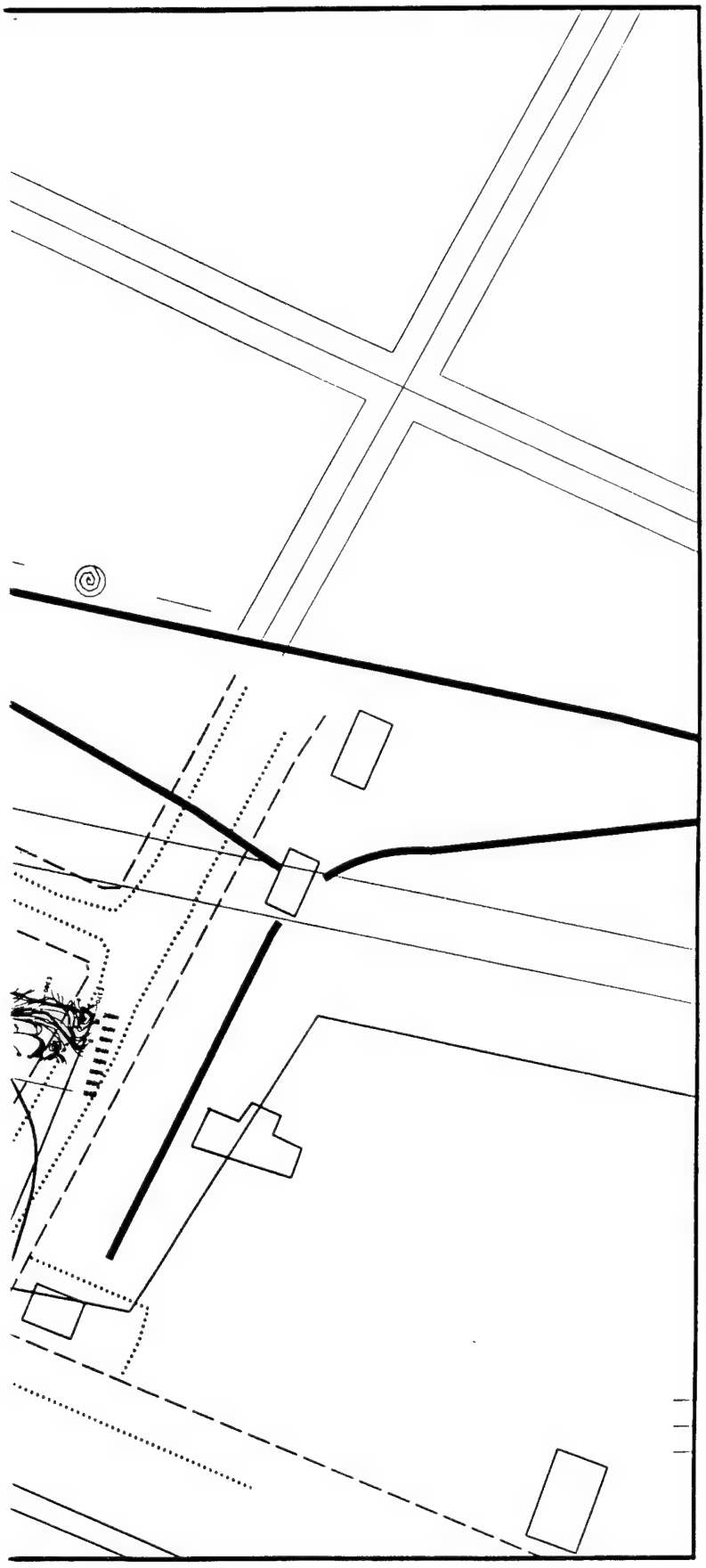


Figure 22. Magnetic contours overlaid o



rs overlaid onto 1909 *Darrowville New Levee Map*.

(2)



(3)

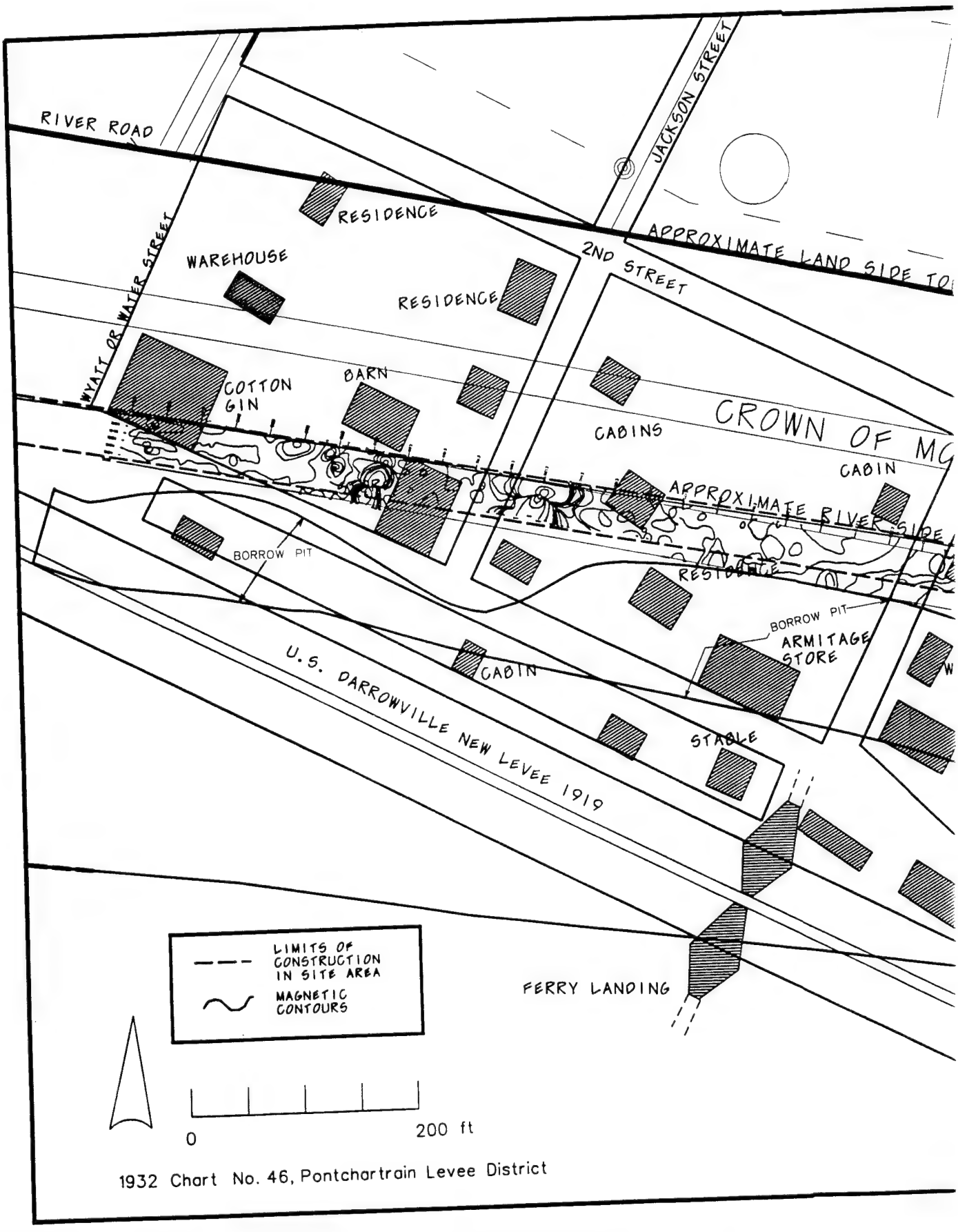
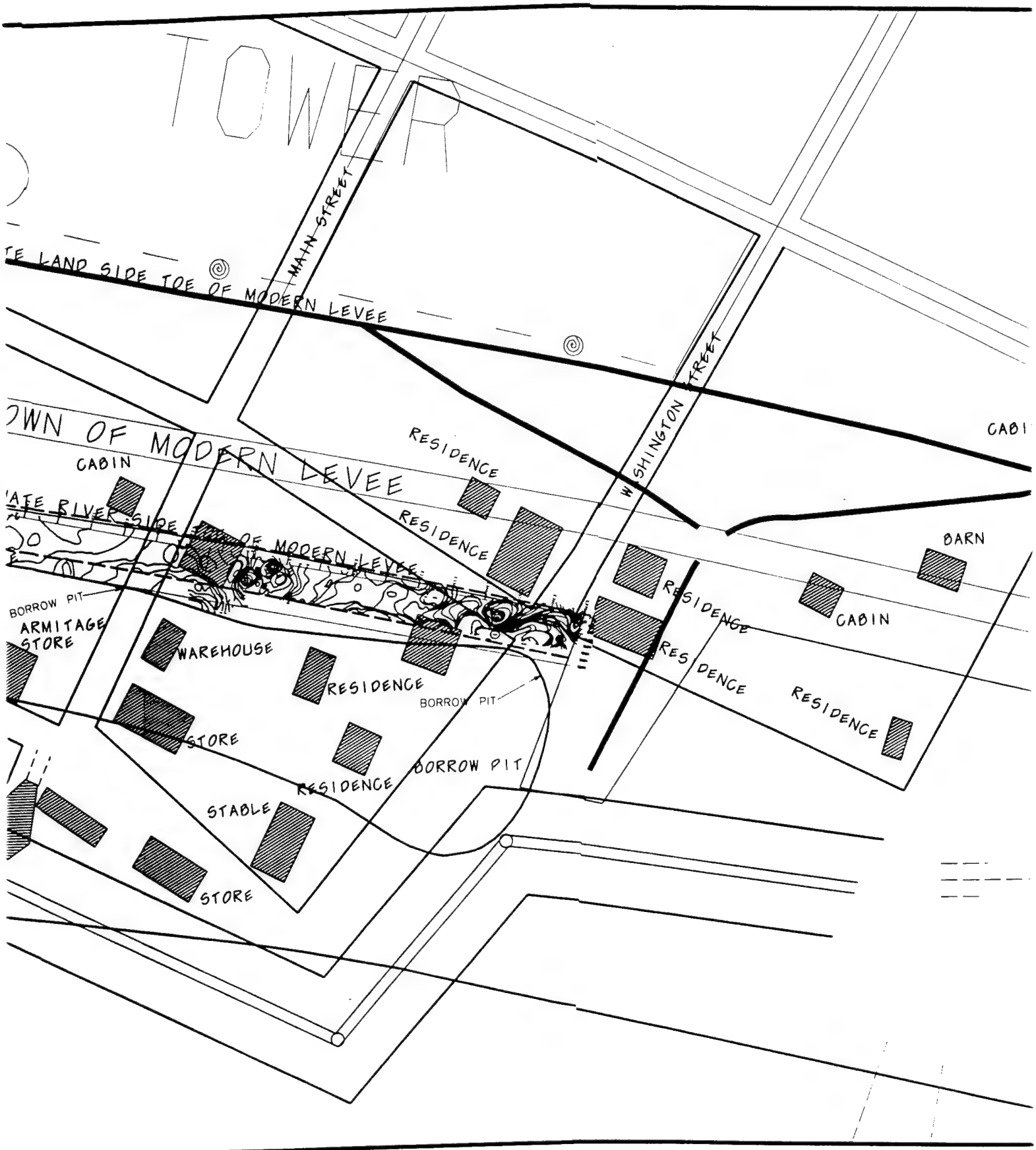
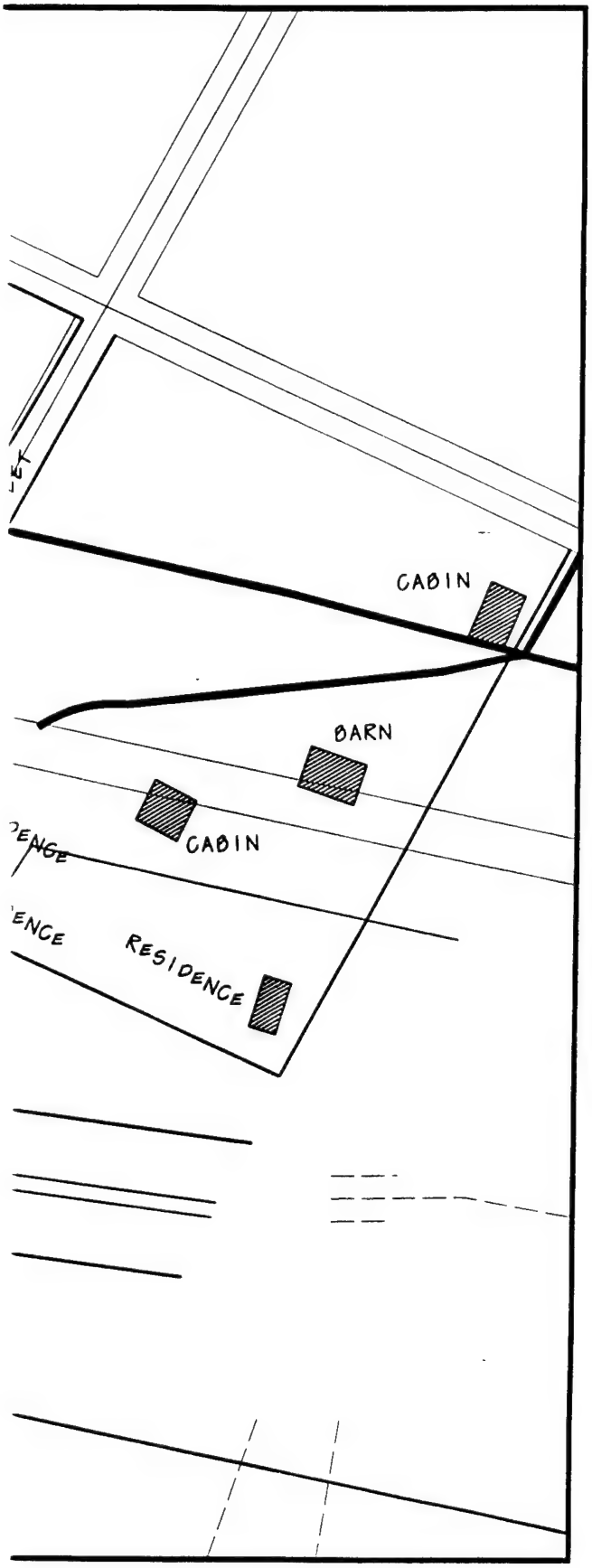


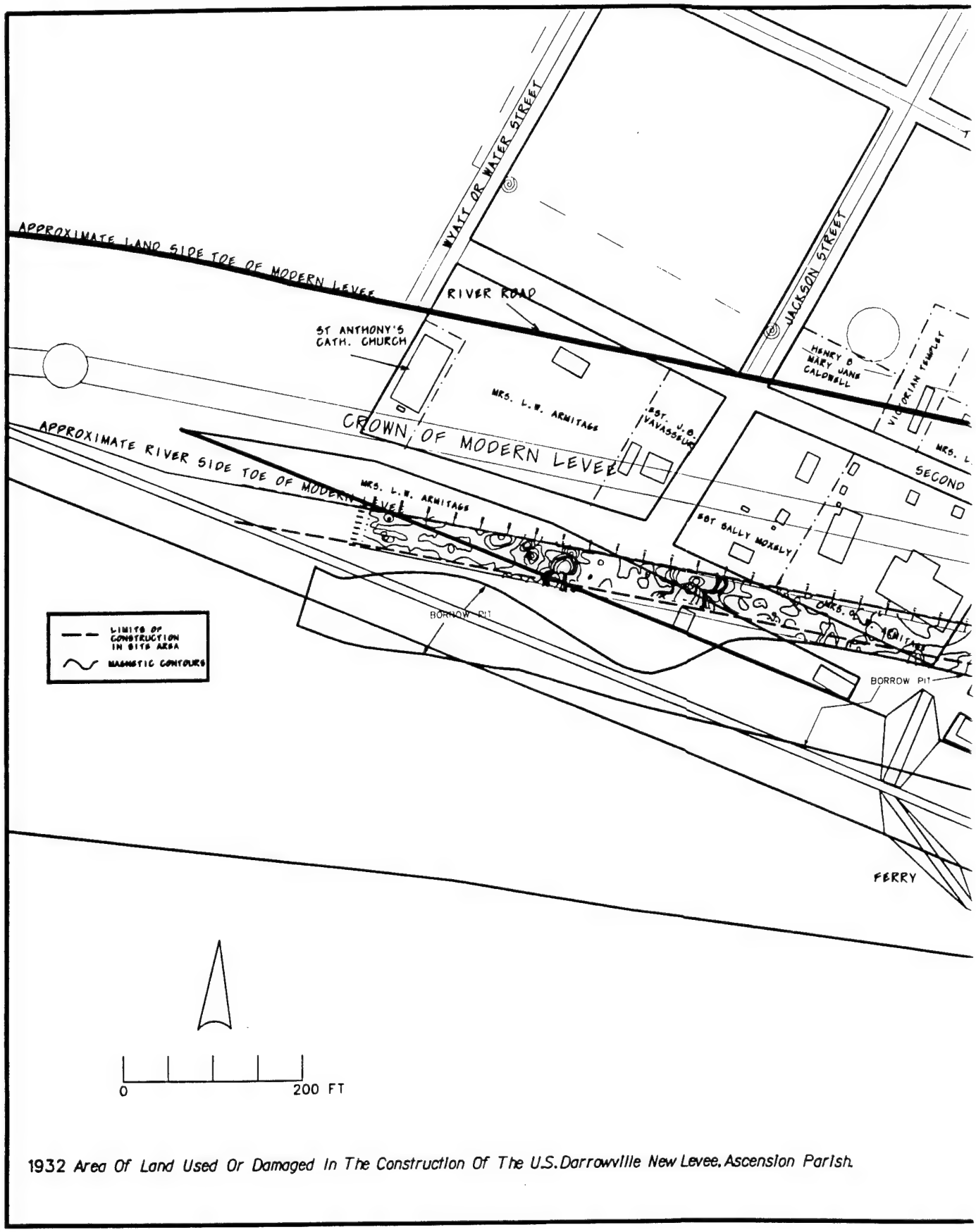
Figure 23. Magnetic contours overl



ignetic contours overlaid on 1932 *Pontchartrain Levee District Map.*

(2)


CABIN
BARN
CABIN
RESIDENCE



1932 Area Of Land Used Or Damaged In The Construction Of The U.S. Darrowville New Levee, Ascension Parish.

Figure 24. Magnetic contours overlaid o

urs overlaid on 1932 *Darrowville New Levee Map*.

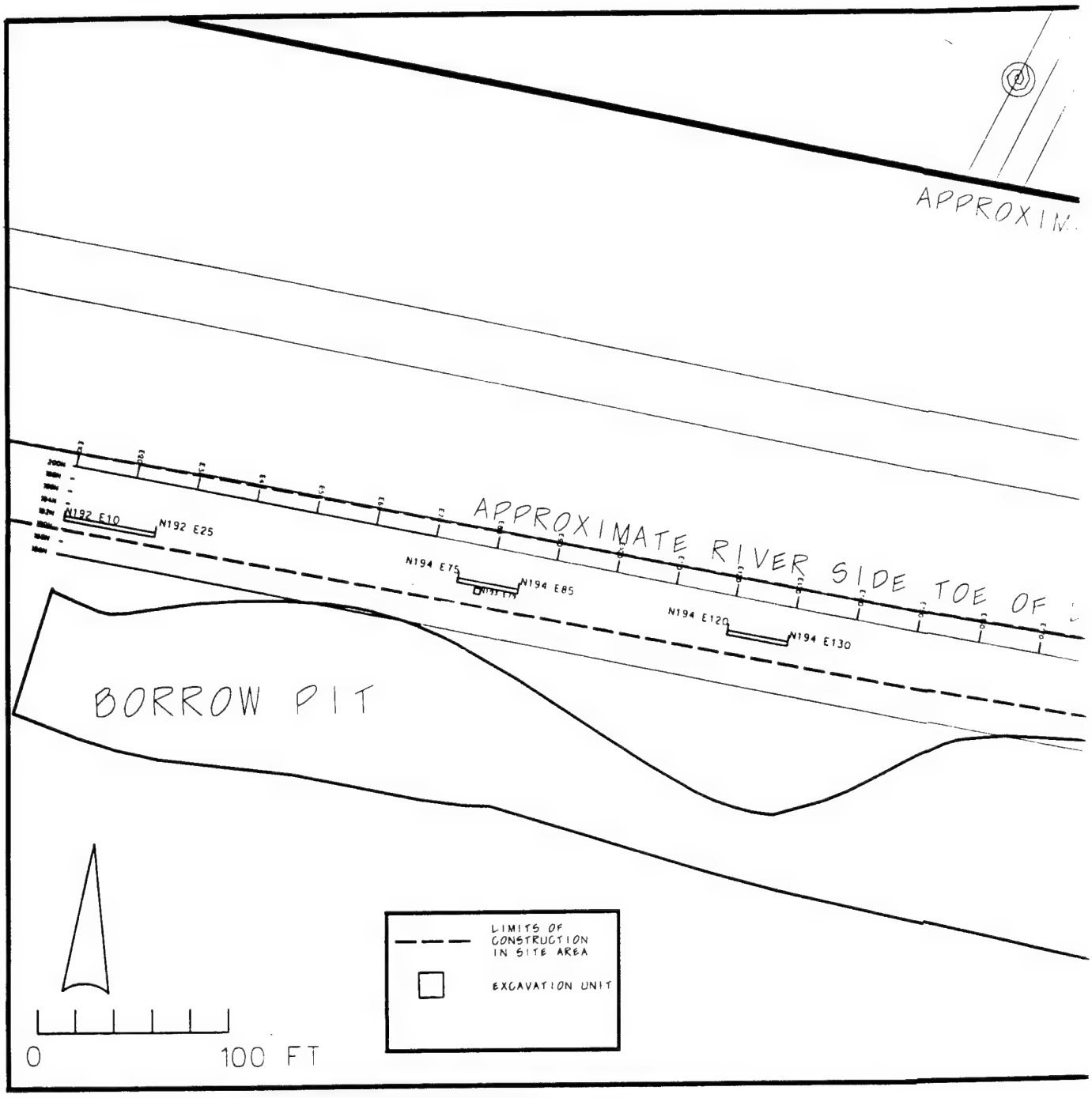


Figure 25. Loc

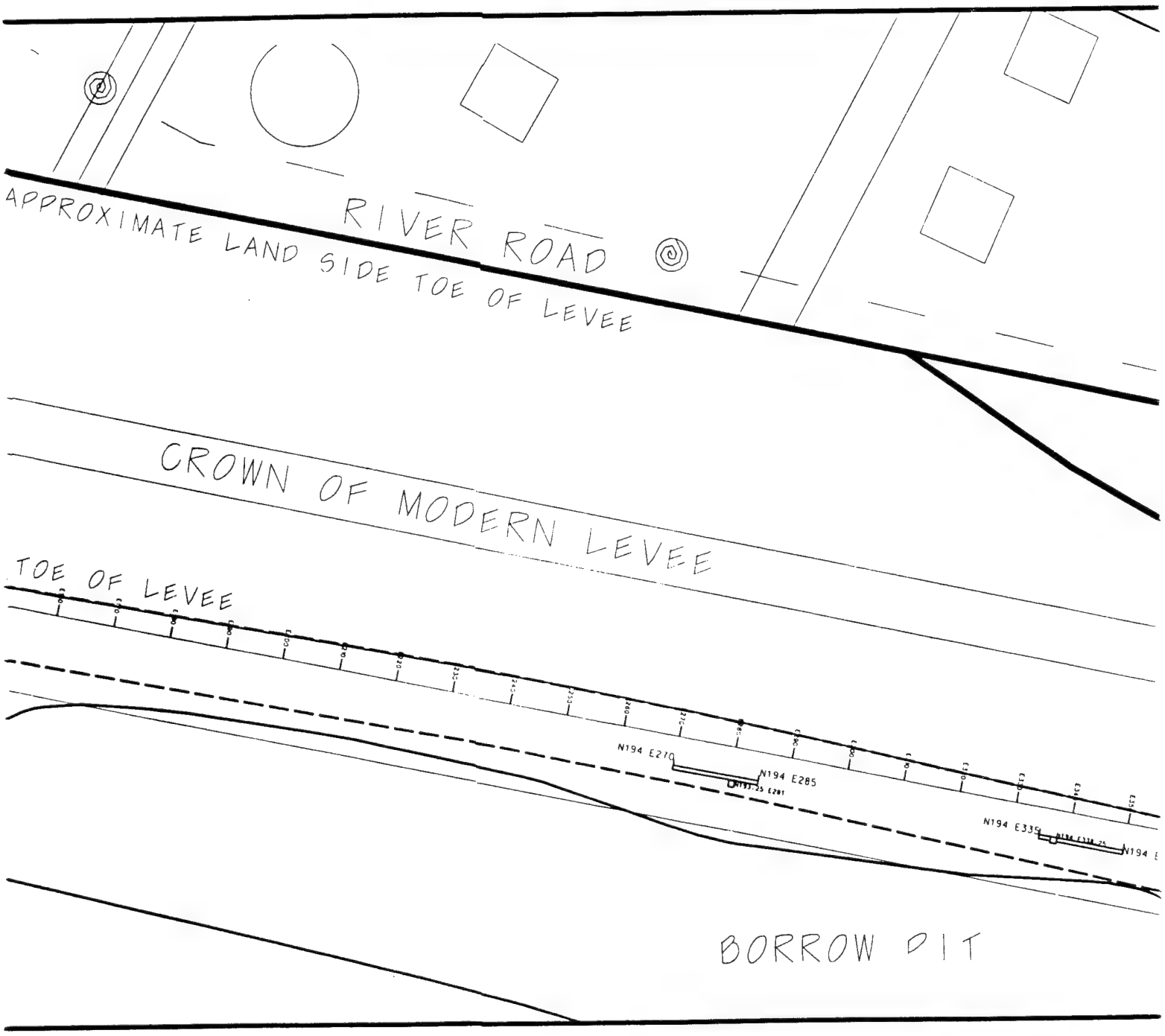


Figure 25. Locations of excavation units.

(2)


E285
N194 E335
N194 E350
ROW PIT

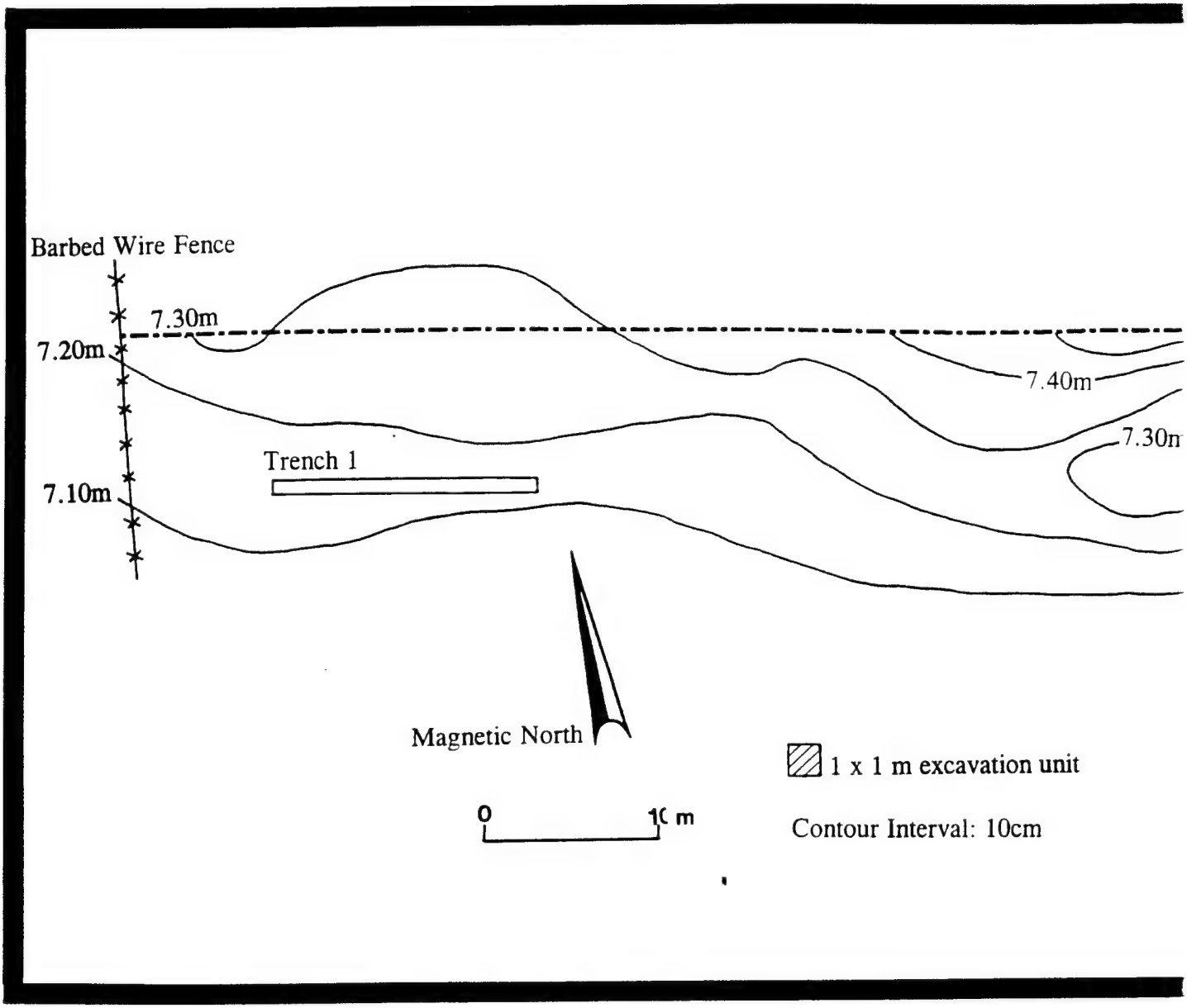
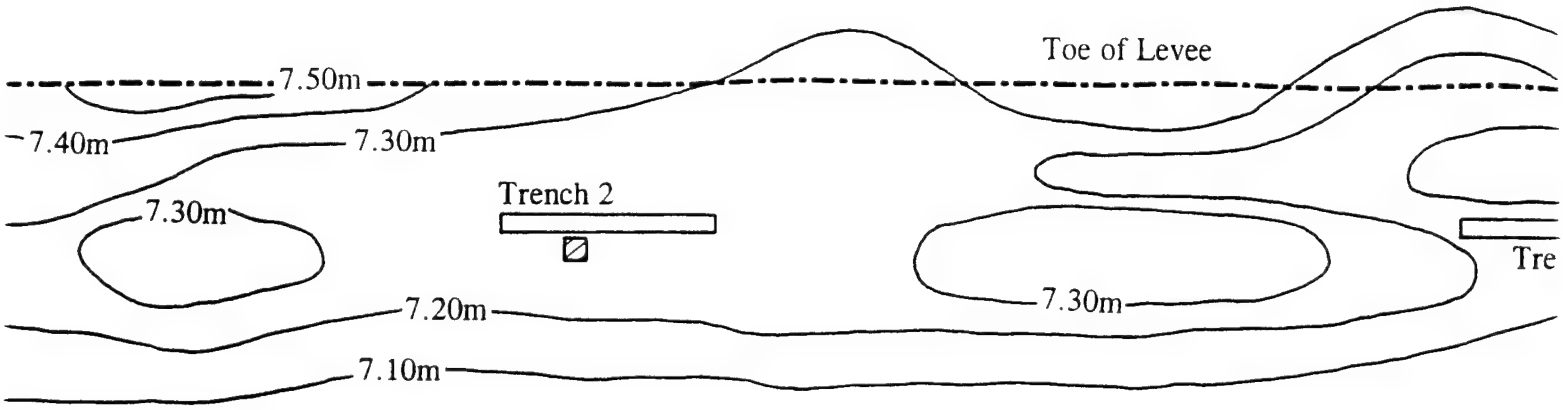


Figure 26. Detail of ex

D

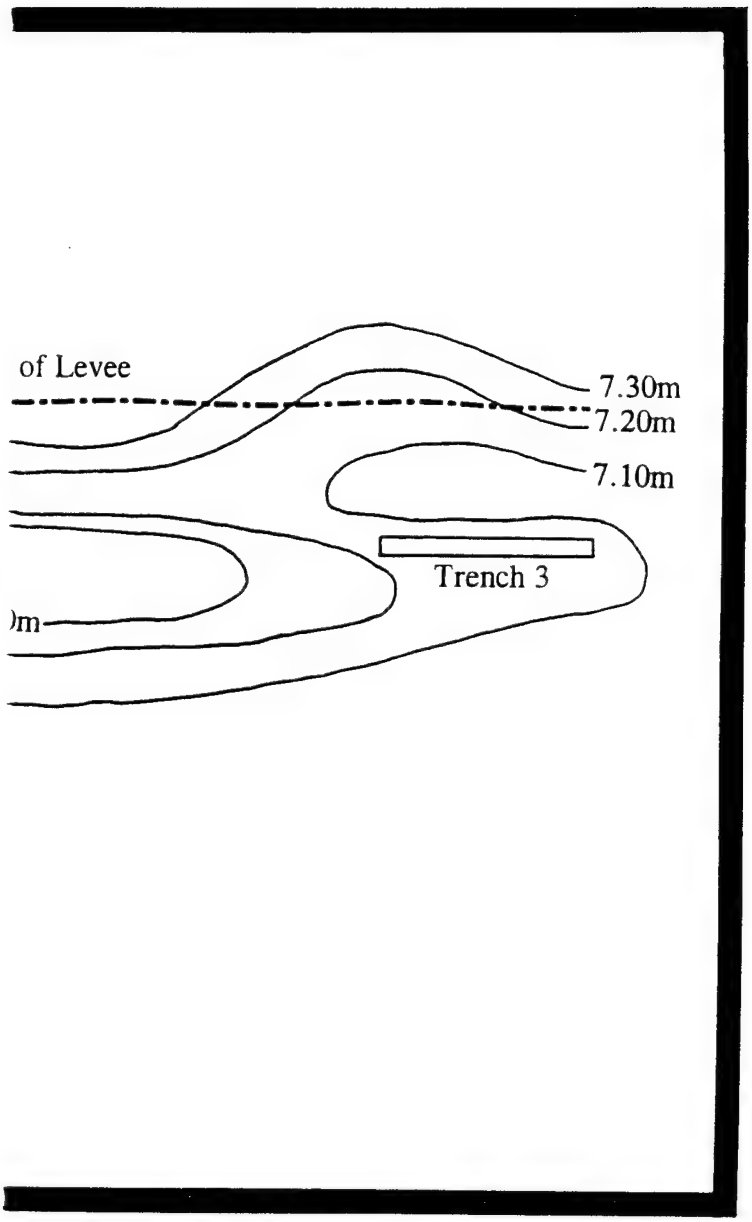


ɔn unit

cm

26. Detail of excavation units, west end of 16AN54.

(2)


of Levee
7.30m
7.20m
7.10m
Trench 3
)m

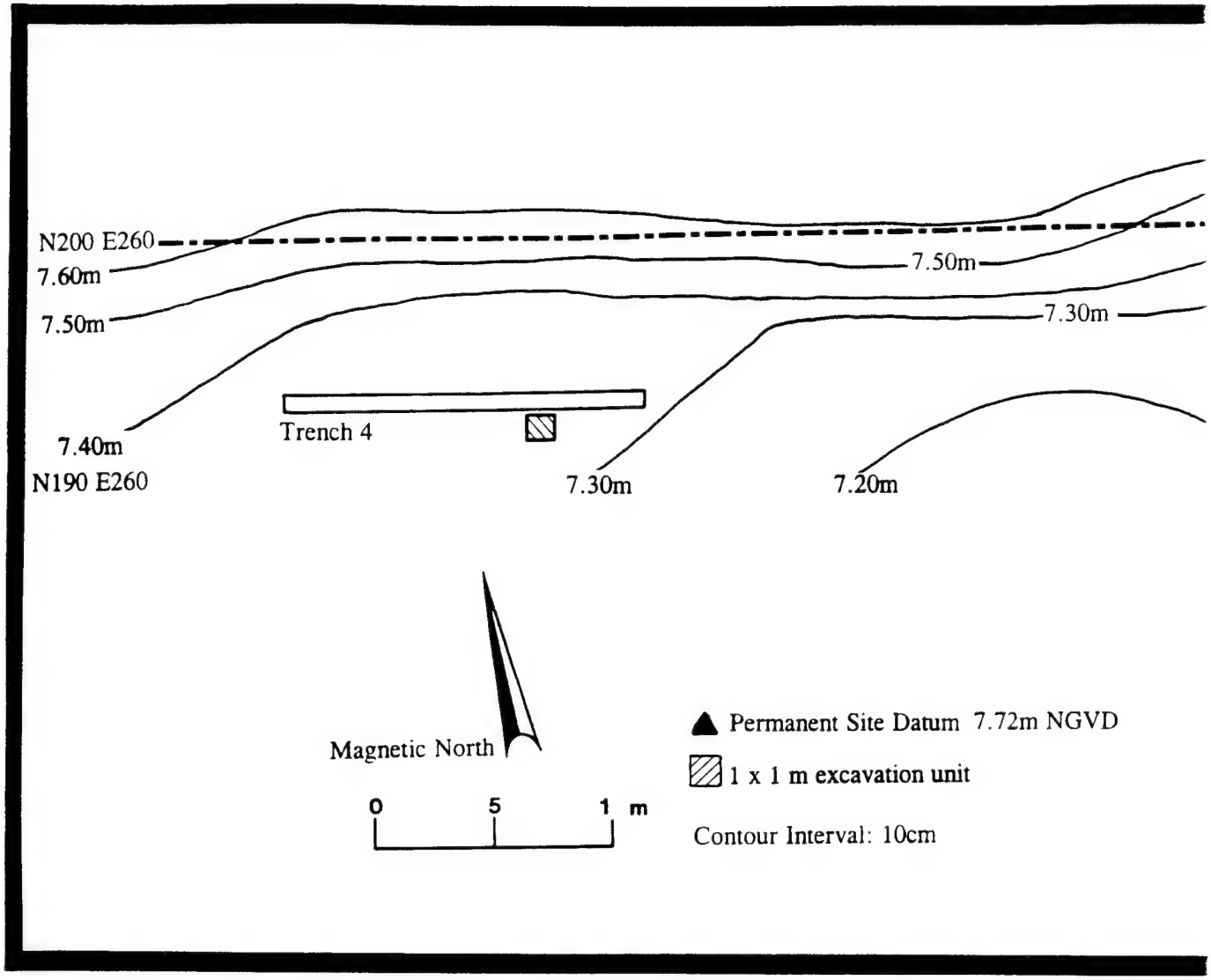
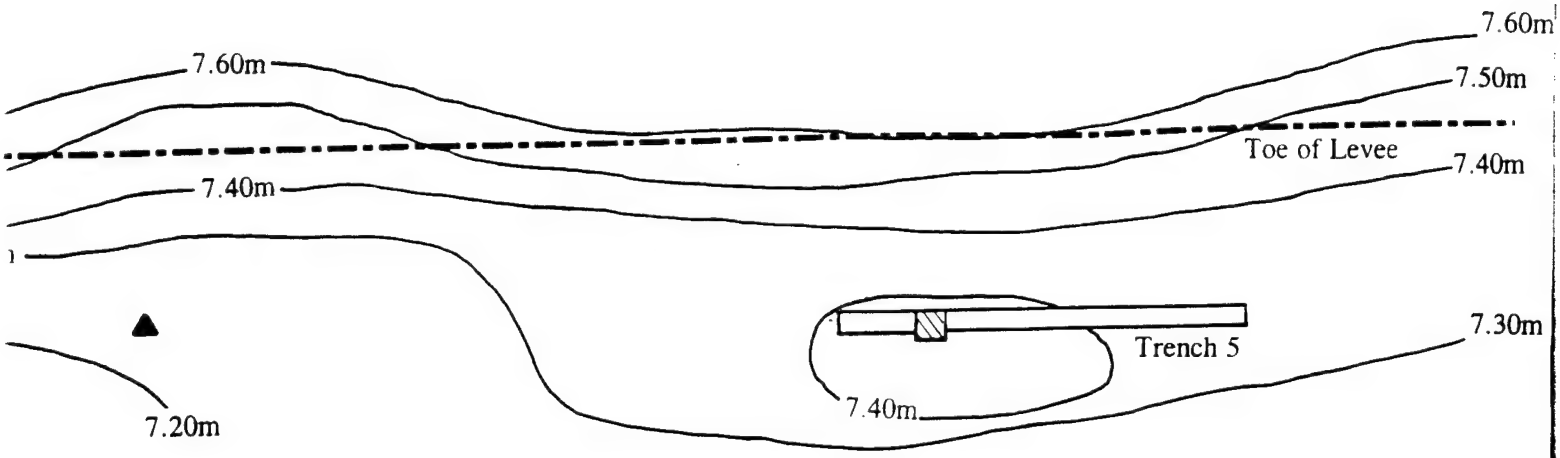


Figure 27. Detail

(1)



7. Detail of excavation units, 16AN54.

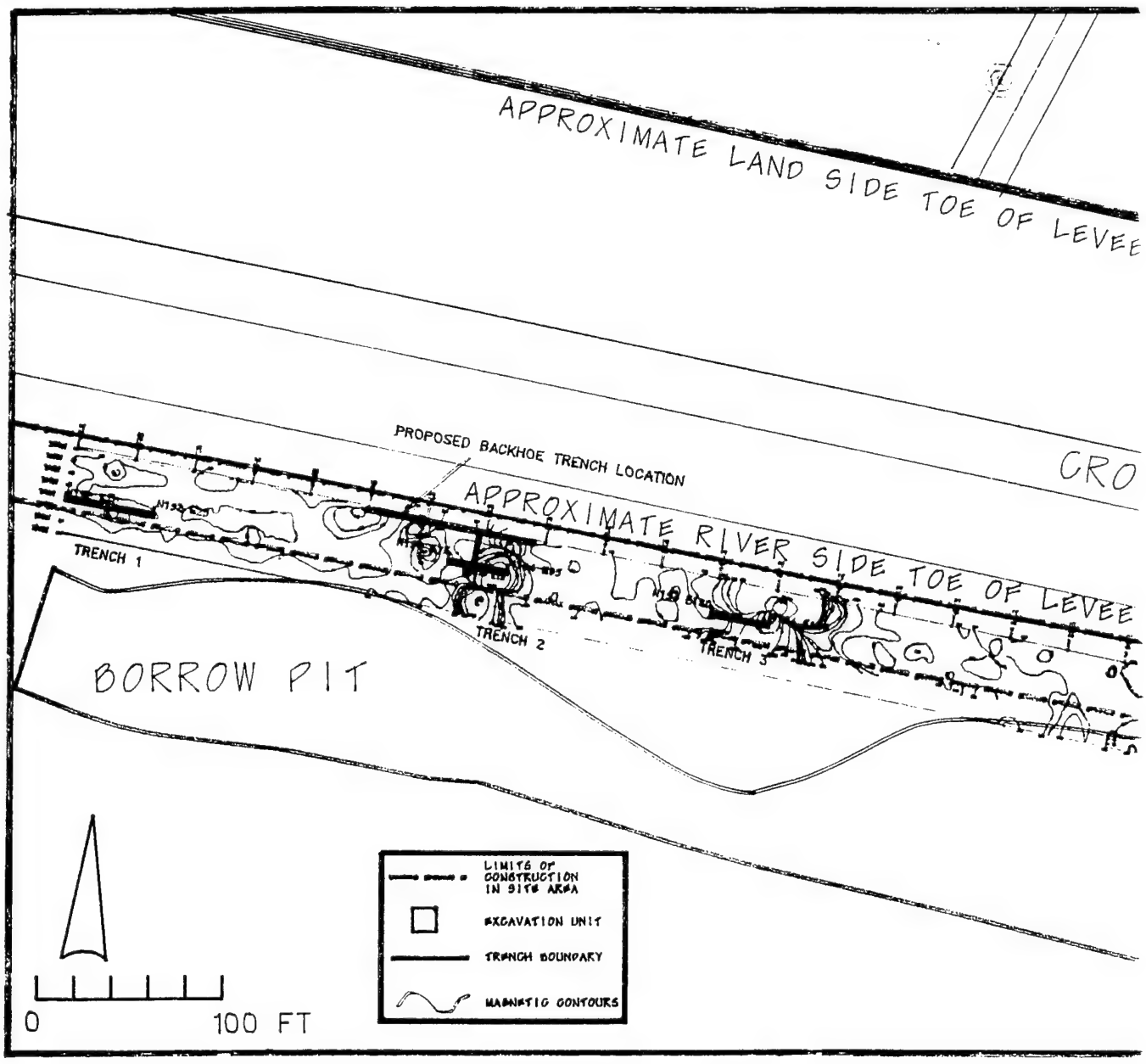
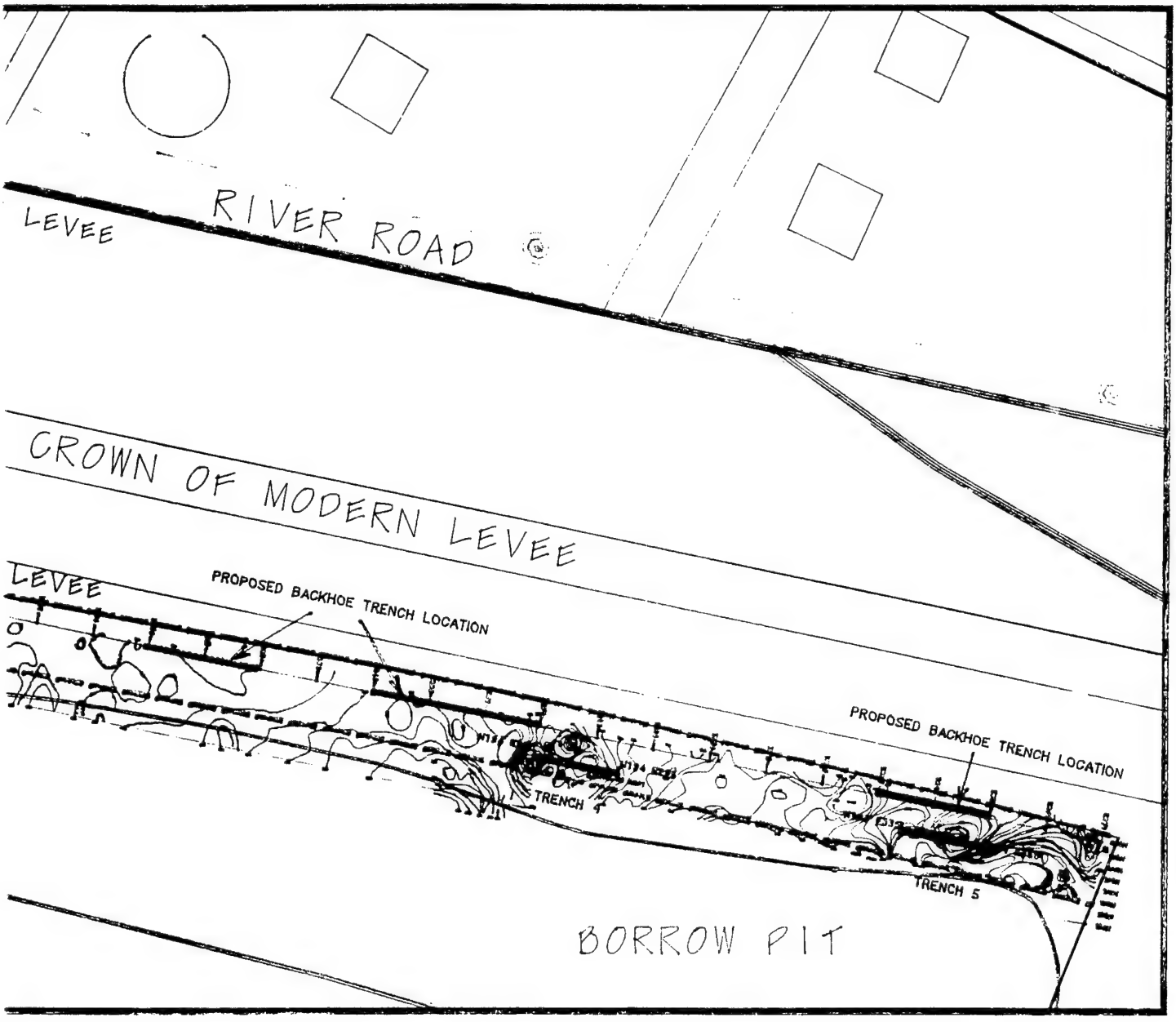
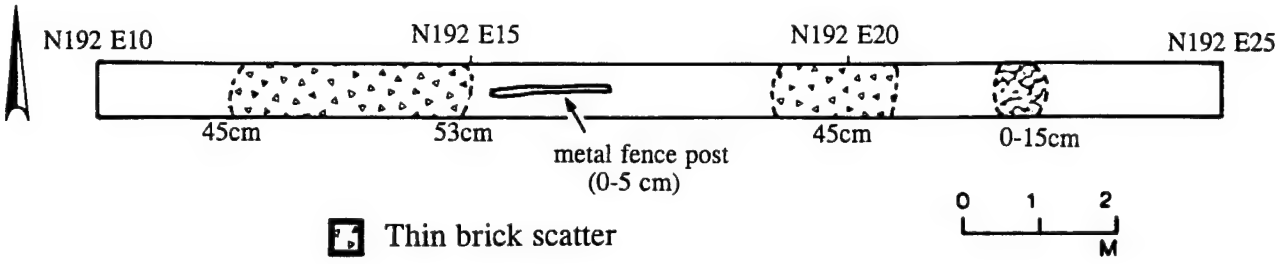
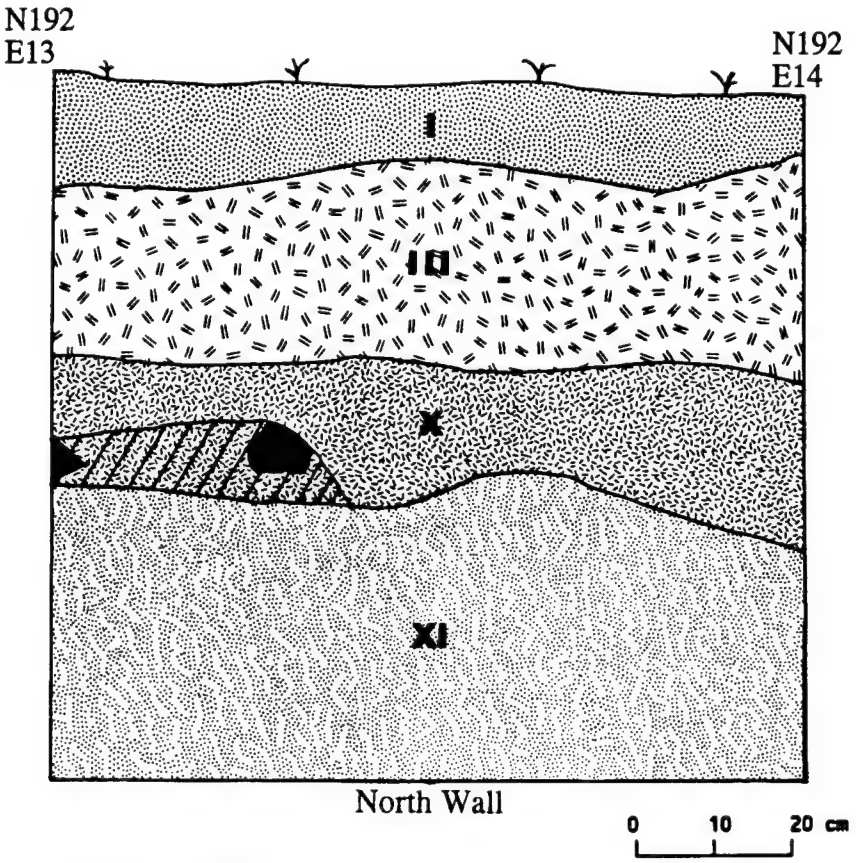


Figure 28. Location of trenches in relation to



relation to magnetic contours. (2)





Ground Surface
I 10YR 4/1 (dark gray) silty clay
III 10YR 5/1 (gray) to 10YR 3/2 (dark grayish brown) silty clay
X 10YR 3/3 (dark brown) clay loam with brick flecking
XI 10YR 5/1 (gray) sterile silty loam
Brick flecking within Stratum X
Bricks

Figure 29. Plan view and representative north profile of Trench 1.

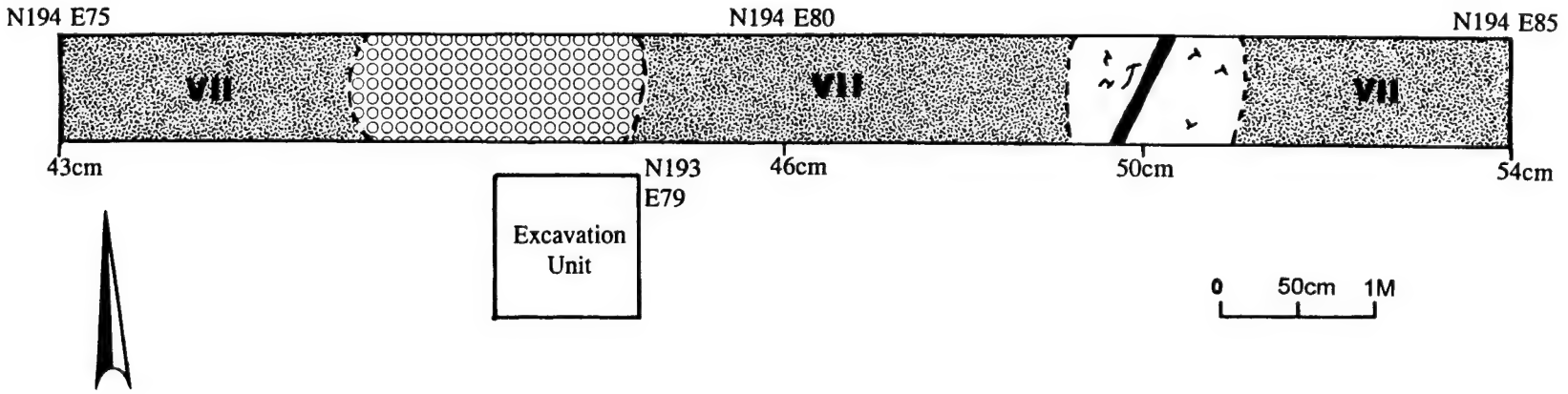
which was designated Stratum III. It extended from approximately 10 to 35 cm below surface. At about 35 cm below surface, Stratum X, a 10YR 3/3 (dark brown) clay loam was encountered. This stratum, which extended to about 55 cm below surface, contained brick flecking and brick fragments. The lowest stratum, Stratum XI, contained no artifacts and consists of a 10YR 5/1 (gray) silty loam.

Trench 2 is located between N194 E75 and N194 E85 and measures 70 cm wide (Figure 25 and 30). Again, the Schonstedt™ sweep indicated two potential sources for the strong dipolar signature located in this area (Figures 21 and 28). Backhoe excavation revealed a midden deposit across the entire length of the trench at a general depth of 46 cm below ground surface. Trawling the trench floor exposed an iron pipe/rod measuring 1.5 in (3.81 cm) at N194 E82.5 at a depth of 50 cm below ground surface. The pipe/rod was associated with a concentration of machine cut and wire nails (Figure 30). In addition, a concentration of blue-edged and annular decorated whitewares was revealed during trawling. This concentration was located between N194 E77 and N194 E79 at a depth of 44 cm below ground surface (Figure 30). Both the pipe and artifact concentrations were within Stratum VII, a 10YR 5/1 (gray) silt loam midden matrix. Backhoe excavation within Trench 2 was terminated at this point. A 1 m^2 excavation unit was placed at N193 E79 to investigate the midden deposit. The stratigraphy within this unit was representative of Trench 2 and is presented below, along with profiles illustrating this stratigraphy. Trench 2 was excavated to a final depth of 50 cm below surface.

No midden deposits or intact structural features were encountered in Trench 3, located between N194 E120 and N194 E130 (Figures 25 and 31). However, a small pocket of cultural material was discovered between N193.7 E23.5 and N193.7 E24 at a depth of 20-35 cm below ground surface (Figure 31). This artifact concentration was located within Stratum III, a 10YR 5/1 (gray) to 10YR 3/2 (dark grayish brown) silt clay matrix. Beneath this, a gravel lens interpreted as a road and a 24" (61 cm) diameter iron pipe were uncovered by the backhoe. The gravel lens or road was designated Stratum VI and consisted of a dense concentration of gravel within a sandy silty loam matrix. The iron pipe was discovered within Stratum X, a 10YR 3/3 (dark brown) clay loam, at a depth of 75 cm below ground surface.

Figure 31 presents a representative profile of Trench 3. Stratum I, the 10YR 4/1 (dark gray) silty clay, extended to a depth of 15 to 20 cm in this area. As was the case in Trenches 1 and 2, Stratum I was underlain by Stratum III in Trench 3. Beneath this was Stratum VI, which was interpreted as the remains of a road. This stratum ranged in depth from 40-70 cm below ground surface. The deepest stratum revealed in Trench 3 was a 10YR 3/3 (dark brown) clay designated Stratum X. Trench 3 was excavated to a final depth of 100 cm.

As noted above, Trench 4 was placed between N194 E270 and N194 E285 to investigate a strong cluster of magnetic anomalies at the projected location of Casso's store (Figures 25 and 28). Excavation revealed a midden deposit within a matrix of 10YR 3/2 (dark grayish brown) silty loam beginning at 70 cm below ground surface on the western end of the trench. This stratum containing the midden deposit ended abruptly, and was juxtaposed with a 10YR 5/2 (brown) to 10YR 5/1 (gray) silty loam (Figure 32). This horizontal break in the stratigraphy was interpreted as the possible former location of a wall. A concentration of oyster shells was found within the brown to gray silty loam at approximately 60 cm below surface, as was a linear arrangement of whole brick (Figure 32). The latter consisted of a single course of stretchers laid end to end. Excavation Unit N193.25 E281 was placed to further investigate this feature. The stratigraphy within this unit was representative of Trench 4 and is presented below, along with profiles illustrating this stratigraphy. Trench 4 was excavated to a final depth of 70 cm below surface.



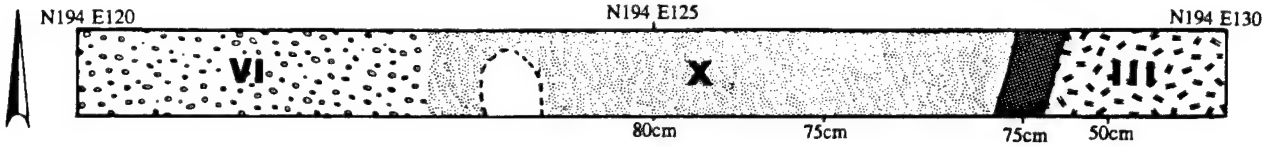
VII 10YR 5/1 (gray) silt loam, midden deposit with small brick fragments and mortar

Concentration of mid-19th century ceramics

Nails

1 1/2" iron pipe/rod

Figure 30. Plan view of Trench 2. Profiles from EU N193 E79 (Figure 34) illustrate trench stratigraphy.



III 10YR 5/1 (gray) to 10YR 3/2 (dark grayish brown) silty clay

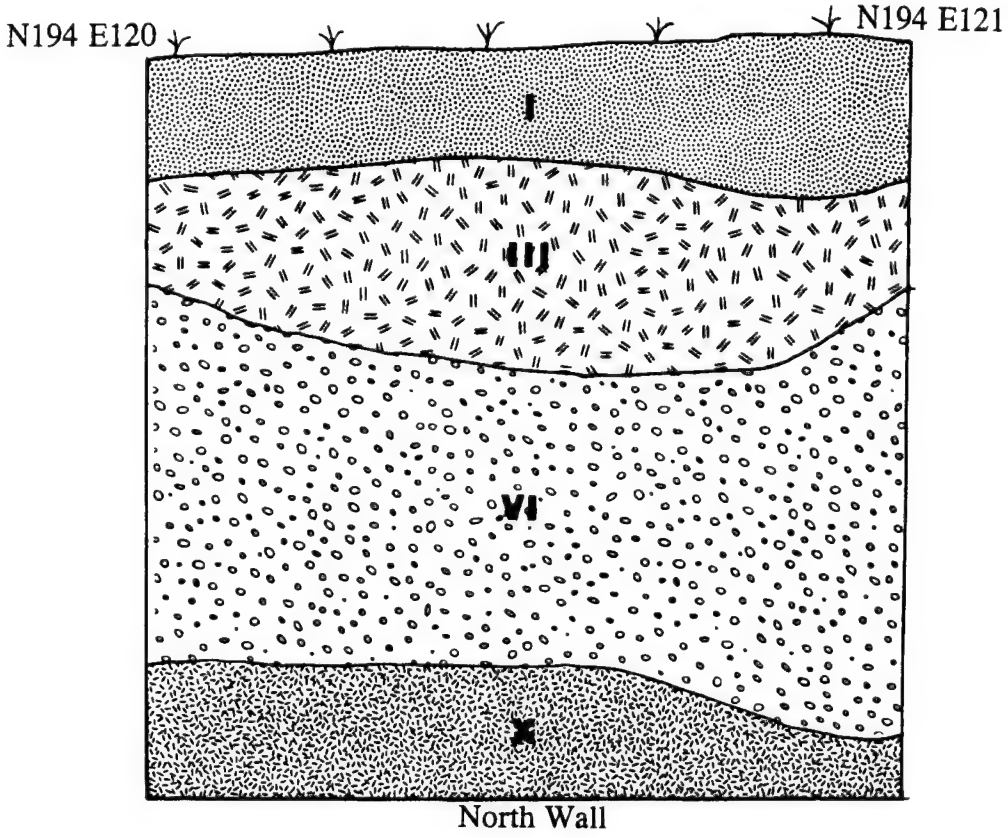
0 50cm 1M

VI 10YR 7/2 (light gray) sandy silty loam with a high percentage of gravel (possible road)

X 10YR 3/3 (dark brown) clay loam

◌ Trash dump (20-35 cm b.g.s.)

■ 24" iron pipe (45-75 cm b.g.s.)



North Wall

⅄ Ground surface

0 10 20 cm

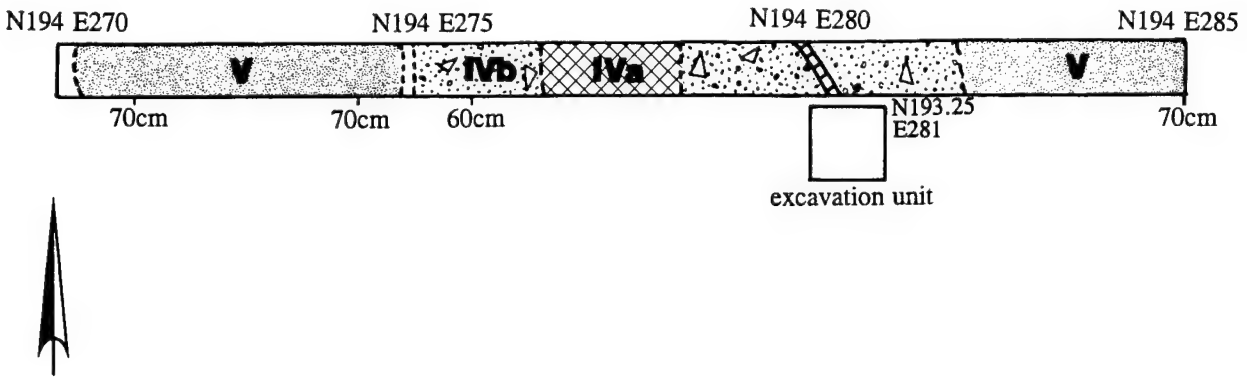
I 10YR 4/1 (dark gray) silty clay

III 10YR 5/1 (gray) to 10YR 3/2 (dark grayish brown) silty clay

VI 10YR 7/2 (light gray) sandy silty loam with a high percentage of gravel (possible road)

X 10YR 3/3 (dark brown) clay loam

Figure 31. Plan view and representative north profile of Trench 3.



IVa Oyster shell
IVb 10YR 5/3 (brown) to 10YR 5/1 (gray) silty loam
V 10YR 3/2 (dark grayish brown) silty loam (midden deposit)
Break between Strata V and IVb (possible wall)
In situ brick

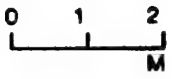
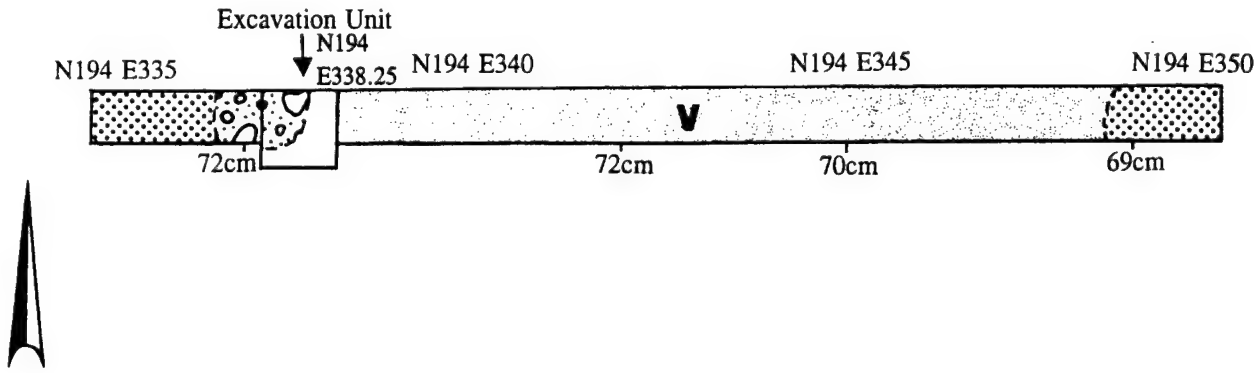


Figure 32. Plan view of Trench 4. Profiles from EU N193.25 E281 (Figure 35) illustrate trench stratigraphy.



V 10YR 3/2 (dark grayish brown) silty loam (midden deposit)
Brick rubble
Burn concentration

0 1 2
M

Figure 33. Plan view of Trench 5. Profiles from EU N194 E338.25 (Figure 37) illustrate trench stratigraphy.

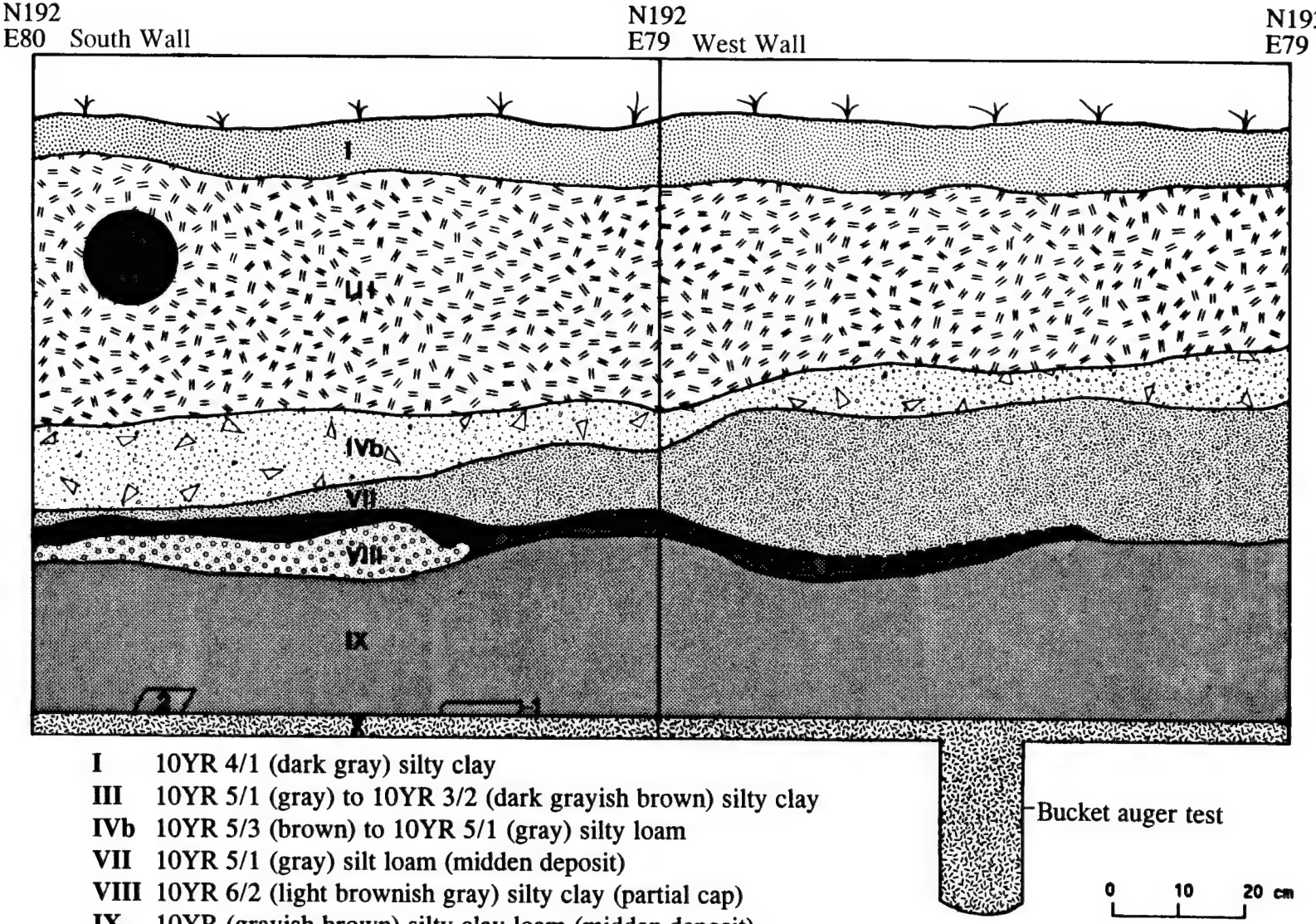
Trench 5 was placed between N194 E335 and N194 E350 to investigate the Lanoux residence and the associated strong magnetic anomaly cluster (Figures 25 and 28). Culture bearing deposits were encountered at approximately 70 cm below surface. At about this depth, lenses of charcoal and burned matter were encountered at either end of the trench (Figure 33). Juxtaposed with the charcoal concentration at the western end of the trench was a zone of dense brick rubble, which appeared at 72 cm below surface. This brick rubble was interpreted as the remnants of a brick chimney which probably had been located along the southern edge of the Lanoux residence. Between the brick concentration and the charcoal concentration on the eastern end of the trench was a midden deposit in a 10YR 3/2 (dark grayish brown) silty loam matrix. The trench was excavated to a final depth of 86 cm below ground surface.

A 1 x 1 m excavation unit located within and extending to the south of Trench 5 was placed to further investigate the brick concentration. It should be noted that backhoe excavation was halted in the area of the unit a the top of the culture bearing stratum. The stratigraphy within this unit was representative of Trench 5 and is presented below, along with profiles illustrating this stratigraphy. The unit was excavated to a final depth of 95 cm below surface.

Following the completion of the backhoe trenches, three 1 x 1 m units were laid in. Hand units were placed south of Trench 2 (EU N193 E79) and Trench 4 (EU N193.25 E281), to investigate the nineteenth-century midden deposit and the linear brick feature, respectively. A third excavation unit was placed almost entirely within Trench 5 (EU N194 E338.25) in order to excavate the suspected remains of the Lanoux chimney by hand.

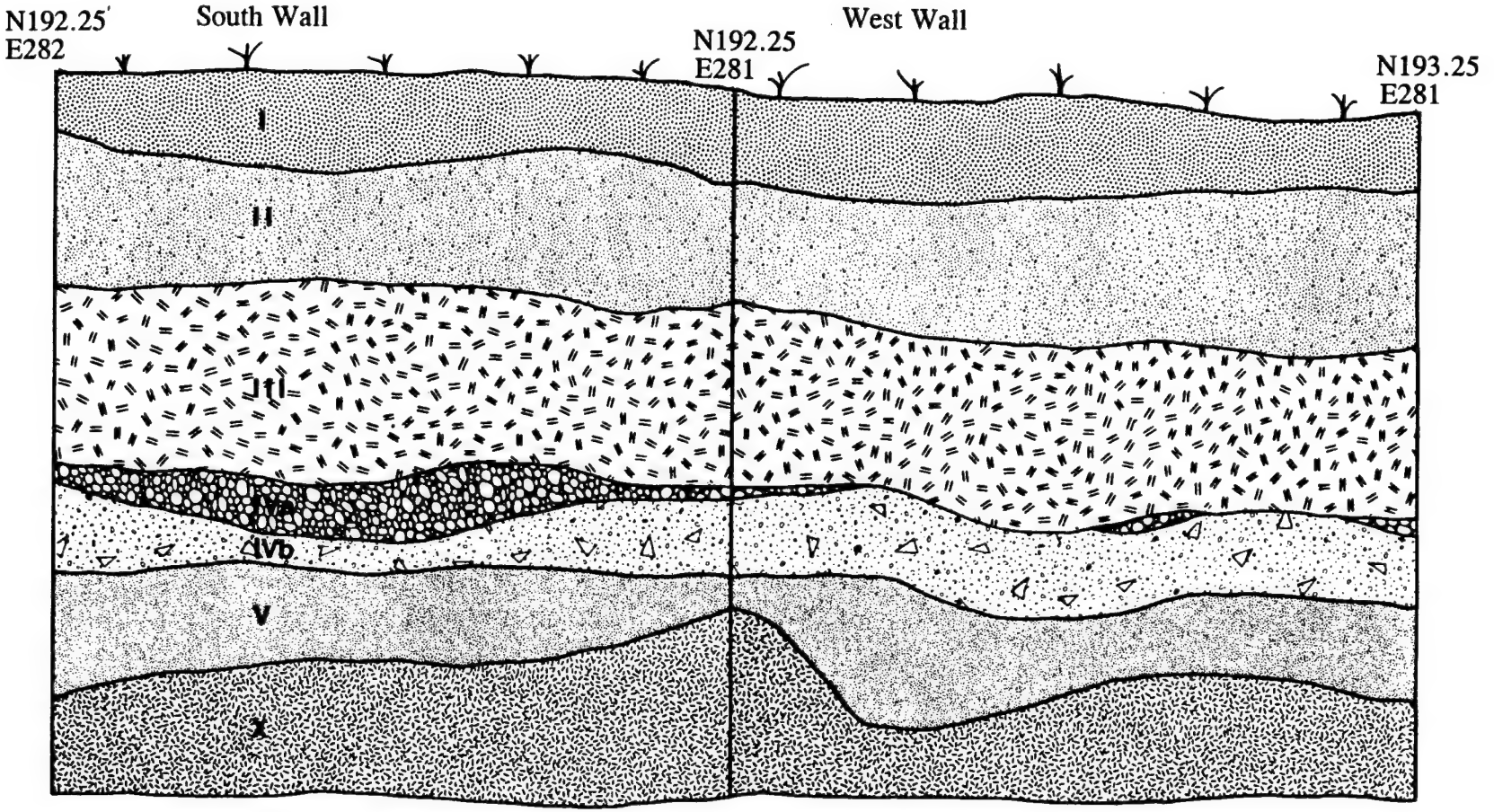
Excavation of Unit N193 E79 revealed a stratigraphic profile of three sterile natural soil horizons overlying two vertically and horizontally distinct midden deposits (Figure 34). Stratum I, a 10YR 4/1 (dark gray) silty clay, was approximately 10 cm thick. Below this was Stratum III, a 10YR 5/1 (gray) to 10YR 3/2 (dark grayish brown) silty clay, which ranges from 25 to 40 cm in thickness. Below Stratum III was a 10YR 5/3 (brown) to 10YR 5/1 (gray) silty loam that was designated Stratum Ivb and measured 5 to 15 cm in thickness. The midden deposits (Stratum VII, a 10YR 5/1 [gray] silt loam and Stratum IX, a 10YR 3/3 [grayish brown] silty clay loam) were separated in some instances by a partial cap (Stratum VIII, a 10YR 6/2 [light brownish gray] silty clay) (Figure 34). Underlying the lower midden deposit is a sterile matrix of 10YR 3/3 (dark brown) clay loam (Stratum X). An auger test in the base of the unit demonstrated that Stratum X extends to a depth of 135 cm below unit datum. Artifacts recovered from the upper midden (Stratum VII) included a variety of decorated whitewares, ironstone, glass fragments, faunal material, lead pencil fragments, buttons, and nail fragments. Materials recovered from the first 5 cm of the lower midden (Stratum IX) duplicated most of the material recovered from the upper midden, but below this, the materials consisted primarily of large, heavily oxidized pieces of iron. We feel these large pieces of iron most probably are the remains of agricultural implements. The materials recovered from Strata VII and IX suggested that they represented two functionally different late-nineteenth-century deposits. They are undoubtedly associated with the Trasimond Landry plantation, which preceded development of the town of Darrow. Since this was an absentee plantation, we may assume that the remains are associated with the plantation workers quarters or the manager's residence.

Excavation Unit N193.25 E281 revealed a stratigraphic profile similar to that described above, but with some notable additions (Figure 35). The profile revealed a soil horizon (Stratum II) which consists of interbedded silty clay and clayey silt loam which probably represents seasonal flooding episodes. Stratum II extended from approximately 15 to 35 cm below surface. Next was Stratum III, which extended to a general depth of 55 cm below surface. Below Stratum III were Strata IVa and IVb, which consist of a thin, restricted lens of oyster shell and what may be another flooding episode, respectively. A single course of brick,



I 10YR 4/1 (dark gray) silty clay
III 10YR 5/1 (gray) to 10YR 3/2 (dark grayish brown) silty clay
IVb 10YR 5/3 (brown) to 10YR 5/1 (gray) silty loam
VII 10YR 5/1 (gray) silt loam (midden deposit)
VIII 10YR 6/2 (light brownish gray) silty clay (partial cap)
IX 10YR (grayish brown) silty clay loam (midden deposit)
X 10YR (dark brown) clay loam
■ Charcoal and brick burn lens within upper midden stratum
● Burrow
1 Metal object
2 Brick

Figure 34. South and west profiles from EU N193 E79.



I 10YR 4/1 (dark gray) silty clay
II 10YR 5/3 (brown) silty clay interbedded with 10YR 6/4 (light yellowish brown) clayey silt loam.
III 10YR 5/1 (gray) to 10YR 3/2 (dark grayish brown) silty clay
IVa Oyster shell
IVb 10YR 5/3 (brown) to 10YR 5/1 (gray) silty loam
V 10YR 3/2 (dark grayish brown) silty loam (midden deposit)
X 10YR 3/3 (dark brown) clay loam

0 10 20 cm

Figure 35. South and west profiles from EU N193.25 E281.

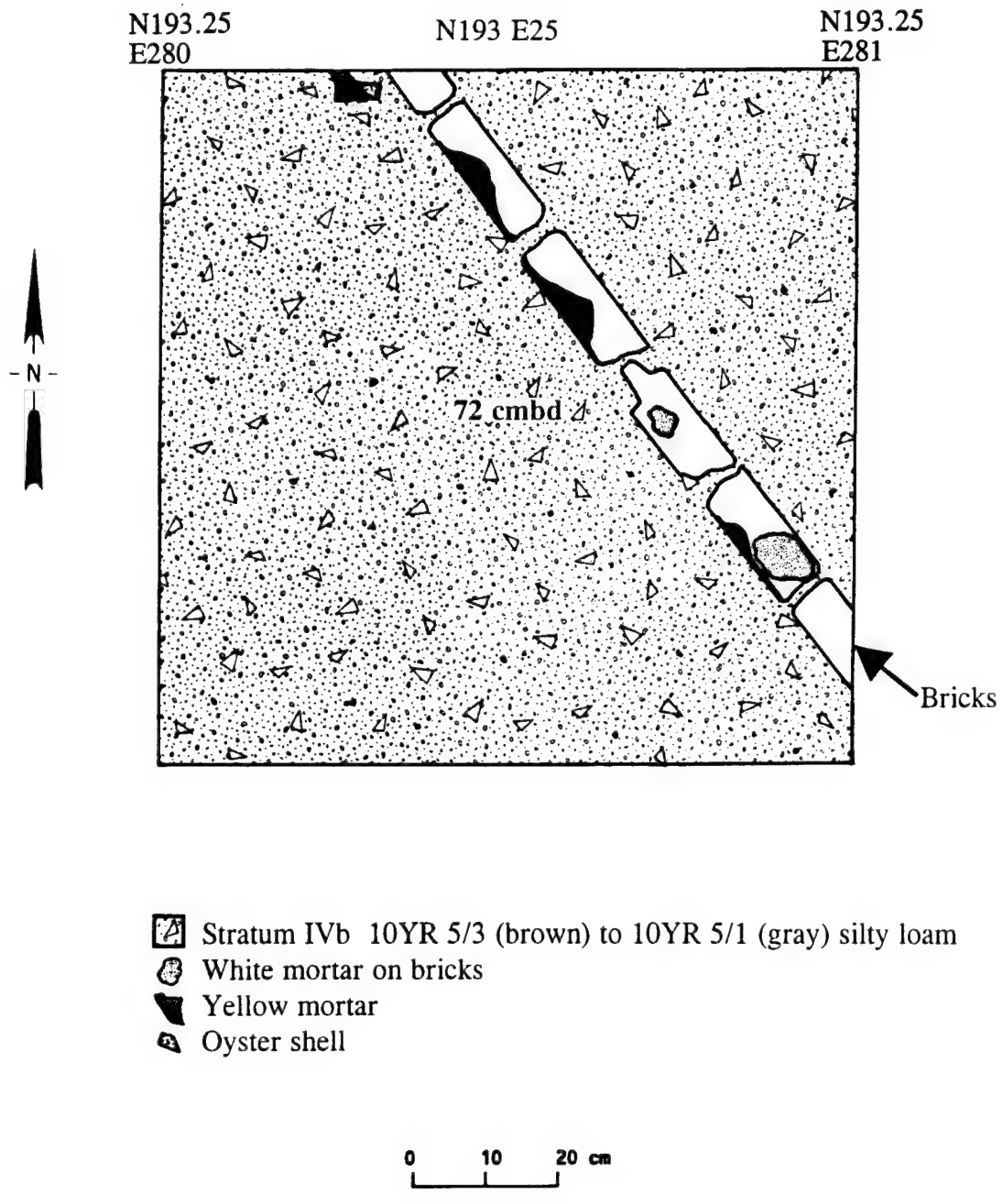
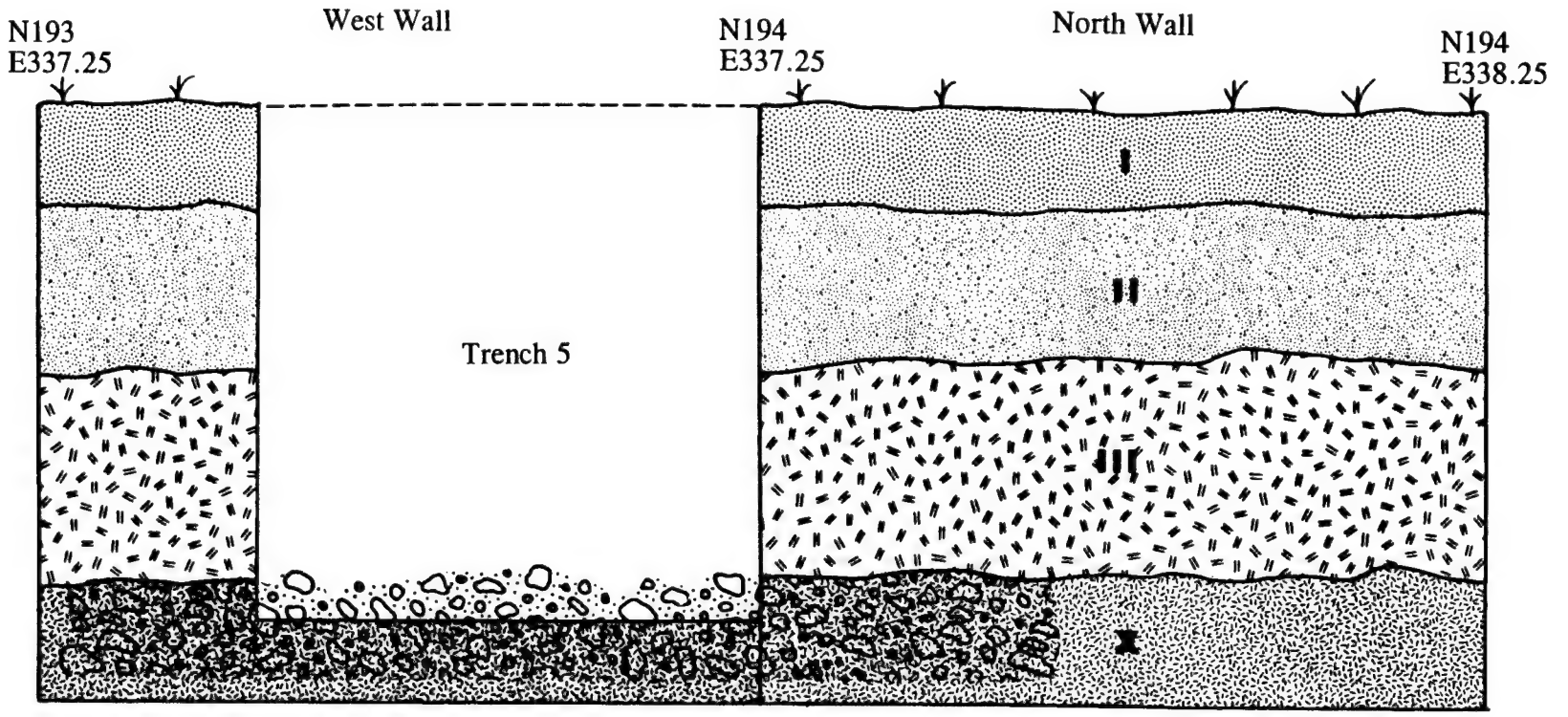


Figure 36. Plan view of EU N193.25 E281.

laid as stretchers end to end and mortared together, were discovered in and near the base of Stratum IVb at 72 cm below surface (Figures 35 and 36). These linear brick were contiguous with those uncovered in Trench 4, and they sat on top of a midden deposit designated Stratum V. This 10YR 3/2 (dark grayish brown) silty loam contained numerous nail fragments, glass, ceramics, small brick fragments, coal, and oyster shell fragments. Faunal material recovered from Stratum V consisted primarily of pig's teeth and long bone elements from either pigs or cows. The material recovered from this unit was consistent with an early-twentieth-century occupation. The intact linear brick feature is believed to represent a border of some sort, possibly for a garden, outside and east of the store owned by D. Casso.

The stratigraphic profile revealed by excavation at N194 E338.25 was identical to that from unit N193.25 E281 except that no midden deposits were encountered. Strata I, II, and III extended to depths of 15 cm, 35 cm, and 65 cm below surface, respectively. Beneath these, Stratum X, a 10YR 3/3 (dark brown) clay loam, was encountered. The remains of a razed brick chimney were identified within Stratum X (Figures 37 and 38). Many of these bricks had been badly burned on one side. Moreover, many of the burned bricks also had a layer of carbon soot on them. Most of the bricks were unglazed, but a few clinkers were recovered. Very few artifacts were found in association with the burned brick fragments. Those recovered include small glass fragments, wire nail fragments, and very small ironstone sherds. It seems likely that the chimney was razed before construction of the new Darrow levee in 1932. However, it should be noted that the razed chimney brick fragments are *in situ,* and therefore represent a final cultural activity before the levee was constructed.

In sum, excavation of five backhoe trenches and three hand excavation units, guided by proton magnetometer survey and historic map evidence, revealed the presence of three distinct midden deposits at the Darrow site. These deposits in Trenches 2 and 4 represent an occupation span beginning just after the Civil War and ending just prior to the construction of the new Darrow levee in 1932. Moreover, the two nineteenth-century midden deposits seem to be functionally different based on the types of artifacts recovered from them. In addition, the presence of intact features has been firmly established. This is manifested in the linear brick feature discovered in Trench 5 and in Excavation Unit N193.25 E281, and the *in situ* remains of a razed chimney located in unit N194 E338.35.



I 10YR 4/1 (dark gray) silty clay
II 10YR 5/3 (brown) silty clay interbedded with 10YR 6/4 (light yellowish brown)
III 10YR 5/1 (gray) to 10YR 3/2 (dark grayish brown) silty clay
X 10YR 3/3 (dark brown) clay loam
Brick rubble

0 10 20 cm

Figure 37. North and west profiles from EU N194 E338.25.

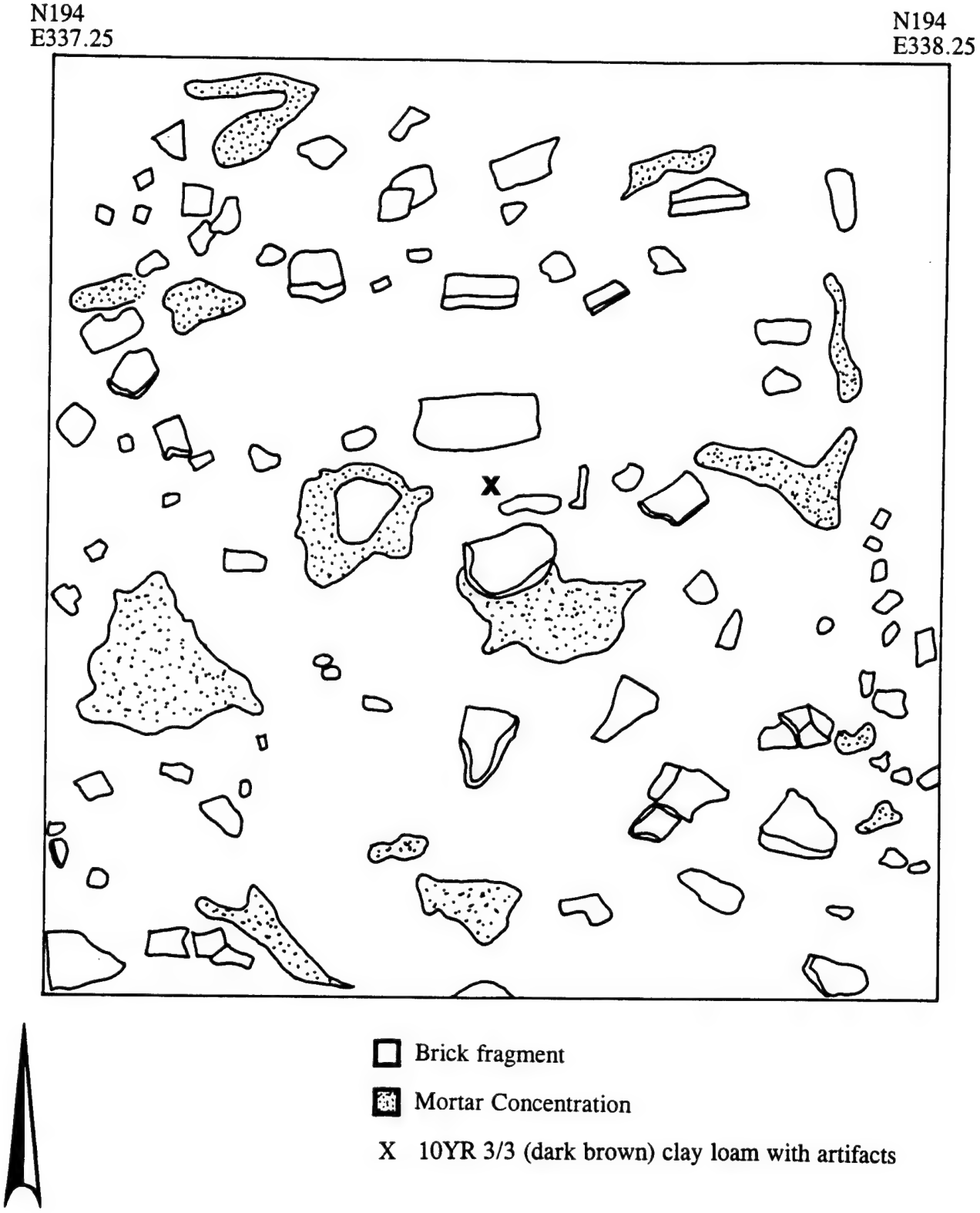


Figure 38. Plan view of EU N194 E338.25 razed chimney at 83 cmbd.

This Page Intentionaly
Left Blank

CHAPTER 8
LABORATORY ANALYSIS

Laboratory Methodology

Cultural materials recovered from 16AN54 are presented in Tables 1-5. Collected materials recovered in the field were washed, sorted, and identified. Ceramics were classified utilizing the paradigmatic classification summarized below. None of the ceramics were backmarked. Glass was described by color, manufacturing attributes (below), and function when identifiable; at minimum sherds were sorted by color and counted. Marked and embossed bottles were identified and dated when these data were available. Nails, buttons, and marbles were classified and dated as described below. Other artifacts were described and dated as possible. Figures 39 through 44 illustrate examples of the artifacts recovered during excavation. Artifacts are curated at the Division of Archaeology, Baton Rouge.

Various cultural materials collected from the excavation units were weighed as well as counted. These included unidentifiable metal, architectural debris, charcoal, cinders, coal, gravel, shell, slag, slate, and wood. Bone was counted and identified by species wherever possible (Table 6).

Soil samples (Table 7) were removed from the field for laboratory flotation. These samples were defloculated with baking soda prior to floating. The flotation system utilized had the basic features of a SMAP machine (Watson 1976). A 0.5 mm geological sieve caught the light fraction, and the heavy fraction rested on 1.6 mm window screen that replaced the bottom of a metal washtub (Kidder and Fritz 1993). These samples were examined for the presence of small-sized faunal and floral remains to determine if such data were available at 16AN54; analysis of the archeobotanical material was beyond the scope of this effort. All of the samples contained carbonized floral material.

Ceramic Classification. As noted above, a paradigmatic classification was utilized for the ceramics. This classification is presented in greater detail in Yakubik (1990). The discussion below summarizes chronological information provided by ceramics.

Cream-colored earthenware was produced in England as early as the 1740s. The composition of the paste was the same as that of white salt-glazed stoneware, but it was fired at a lower temperature, colored with metal oxides, and covered with a lead glaze (Noel Hume 1972:350). In 1759, Josiah Wedgwood and Thomas Whieldon produced a cream-colored earthenware body covered with a fluid green glaze. The ware was not popular, and Wedgwood embarked upon further refinements of the cream-colored paste. By about 1762, he had developed creamware, which he called "creamcolour," and which is also known as "Queen's ware" (Noel Hume 1970:124, 1972:350). Creamware has a thin, refined cream-colored earthenware paste covered with a clear lead glaze which appears yellowish or greenish in vessel crevices. Importation to the American colonies began at least as early as the 1760s, although it and other British ceramics did not appear in quantity in Louisiana until the 1780s (Yakubik 1990). The ware continued in use through the first two decades of the nineteenth century. The popularity of creamware contributed to England's increasing control of the world ceramic market in the late-eighteenth century (Miller 1980).

Although decorated creamware was produced, creamware recovered from archeological contexts is usually plain. Creamware occasionally is found with annular decoration, which consists of multiple horizontal bands of multi-colored slips around the vessel often in conjunction with engine-turned decoration. Annular decoration is found on creamware after ca. 1785 (Noel Hume 1970:131).

Table 1. Artifacts from Trench 1.

	N192 E22, Str. I	N192 E13, Str. III	Backdirt	Total
Modern ironstone	2		2	4
Polychrome hand-painted modern ironstone	21			21
Porcelain			3	3
Blue hand-painted salt-glazed stoneware			1	1
Blue Milk of Magnesia bottle			7	7
Brown glass	1			1
Clear glass	6		8	14
Clear tumbler base	2			2
Clear pressed glass bowl			2	2
Clear bottle/jar base	1		1	2
Clear jar neck, threaded closure			1	1
Green glass			2	2
Green modern soda bottle base			1	1
Olive wine bottle, kickup		8		8
Aluminum can top	1			1
Aluminum can pop tops	2			2
Aluminum fragment	1			1
Chrome fragment			1	1
Square nail			1	1
Wire nail			1	1
UID nail			2	2
UID metal (count)	7			7
UID metal (weight in grams)	6.8			6.8
Glass marbles	2		1	3
Rangia shell (count)			1	1
Rangia shell (weight in grams)			18.6	18.6
Brick (count)			3	3
Brick (weight in grams)			52.6	52.6
Slate (count)	1			1
Slate (weight in grams)	5.8			5.8
Total	47	8	38	93

Table 2. Artifacts from Trench 2 and Excavation Unit N193 E79.

	N194 E76-78, Str. IVb	N194 E82-85, Str. IVb & VII	N194 E77-79, Str. VII	N194 E78-80, Str. VII	N194 E80-82, Str. VII
Pearlware		1			
Annular pearlware			1		
Blue shell-edged pearlware					
Green shell-edged pearlware					
Blue transfer-printed pearlware					
Whiteware	2		1	1	
Annular whiteware			1		
Blue shell-edged whiteware			1		
Polychrome hand-painted whiteware					
Black transfer-printed whiteware					
Blue transfer-printed whiteware					
Red transfer-printed whiteware					
Green transfer-printed whiteware					
Mulberry transfer-printed whiteware				1	
Classic ironstone				1	
Ironstone	1	1		1	
Polychrome hand-painted ironstone					
Porcelain					
Decaled porcelain				1	
Grey salt-glazed stoneware					
Salt-glazed brown stoneware, Albany slip int.					
Blue glass					
Brown glass					
Clear glass		1			
Clear crimped lamp glass					
Clear bottle base					
Flat glass	1				1
Light green glass				1	
Light green panelled pharmaceutical bottle glass					
Olive glass				1	
Opaque blue glass				1	
Melted glass	2				
Square nail	5	9		3	8

Table 2. Artifacts from Trench 2 and Excavation Unit N193 E79.

	N194 E76-78, Str. IVb	N194 E82-85, Str. IVb & VII	N194 E77-79, Str. VII	N194 E78-80, Str. VII	N194 E80-82, Str. VII
Wire nail					
UID nail	3	2			3
Spike		1			
Tack					
Caster					
Pintle		1			
UID metal (count)					
UID metal (weight in grams)					
Kaolin pipestem					
Ceramic button, 4 hole					
Ceramic button, 2 hole					
Rivet					
Eyelet					
Brass jewelry fragment					
Slate pencil					
Shotgun cartridge					
Bullet cartridge					
Bone		2			
Fish otolith					
Oyster shell (count)	1				
Oyster shell (weight in grams)	23				
Charcoal (count)		1			
Charcoal (weight in grams)		0.9			
Coal (count)					
Coal (weight in grams)					
Cinder (count)					
Cinder (weight in grams)					
Gravel (count)					
Gravel (weight in grams)					
Brick (count)	2	3			1
Brick (weight in grams)	53.7	14.3			15.9
Misc architectural debris (count)					
Misc architectural debris (weight in grams)					
Slate (count)					
Slate (weight in grams)					
Total	17	22	4	11	13

Table 2. Artifacts from Trench 2 and Excavation Unit N193 E79.

	EU N193 E79 Level 1, Str. VII	EU N193 E79 Level 2, Str. VII	EU N193 E79 Level 3, Str. VII	EU N193 E79 Level 4, Str. VII	EU N193 E79 Level 4, Str. IX	EU N193 E79 Level 5, Str. IX	Total
Pearlware							1
Annular pearlware							1
Blue shell-edged pearlware		1	1				2
Green shell-edged pearlware		1					1
Blue transfer-printed pearlware	1						1
Whiteware	4	4		1	2	1	16
Annular whiteware	1	1					3
Blue shell-edged whiteware	2						3
Polychrome hand-painted whiteware		1					1
Black transfer-printed whiteware		2					2
Blue transfer-printed whiteware	2	1	1				4
Red transfer-printed whiteware					1		1
Green transfer-printed whiteware					1		1
Mulberry transfer-printed whiteware	1	3					5
Classic ironstone		2					3
Ironstone	4	3			1		11
Polychrome hand-painted ironstone				1			1
Porcelain	1						1
Decaled porcelain							1
Grey salt-glazed stoneware		1					1
Salt-glazed brown stoneware, Albany slip int.		1					1
Blue glass					1		1
Brown glass	2	3	1	2		2	10
Clear glass	20	16	2	2	3	1	45
Clear crimped lamp glass				1			1
Clear bottle base					1		1
Flat glass	18	7	2	4			33
Light green glass	13	7	6	3	1		31
Light green panelled pharmaceutical bottle glass				3			3
Olive glass	10	6			3	2	22
Opaque blue glass	1		5	10	2	1	20
Melted glass	6	12	5	2			27
Square nail	63	75	82	36	17	14	312

Table 2. Artifacts from Trench 2 and Excavation Unit N193 E79.

	EU N193 E79 Level 1, Str. VII	EU N193 E79 Level 2, Str. VII	EU N193 E79 Level 3, Str. VII	EU N193 E79 Level 4, Str. VII	EU N193 E79 Level 4, Str. IX	EU N193 E79 Level 5, Str. IX	Total
Wire nail		1					1
UID nail	36	33	126	52	22	6	283
Spike				4	5		10
Tack		4	6				10
Caster				1			1
Pintle							1
UID metal (count)	4		3	22	17	13	59
UID metal (weight in grams)	9.1		17.1	129.8	72.1	210.6	439
Kaolin pipestem		2					2
Ceramic button, 4 hole		1					1
Ceramic button, 2 hole		1					1
Rivet					1		1
Eyelet					1		1
Brass jewelry fragment		1					1
Slate pencil	1	5	4	2			12
Shotgun cartridge				1			1
Bullet cartridge		2					2
Bone	7	6	9	16	6	1	47
Fish otolith		1					1
Oyster shell (count)	2		1				4
Oyster shell (weight in grams)	79.7		40.6				143
Charcoal (count)							1
Charcoal (weight in grams)							0.9
Coal (count)	6		1		1	3	11
Coal (weight in grams)	1.7		4.3		1.9	37	44.9
Cinder (count)			1				1
Cinder (weight in grams)			0.4				0.4
Gravel (count)	1						1
Gravel (weight in grams)	3.6						3.6
Brick (count)	6		4	1	1	1	19
Brick (weight in grams)	24.7		100.3	2.8	4.5	73.5	290
Misc architectural debris (count)	2		2	3	3	3	13
Misc architectural debris (weight in grams)	5		13.4	22.8	24.3	73.3	139
Slate (count)	1			1			2
Slate (weight in grams)	1.6			1.0			2.6
Total	215	204	262	168	90	48	1054

Table 3. Artifacts from Trench 3.

	N194 E120-122, Str. I	N194 E122 124, Str. I	N194 E124 126, Str. III	N194 E128 130, Str. III	N194 E126-128, Str. VI	Total
Creamware	1					1
Blue transfer-printed pearlware		1				1
Whiteware	1			1		2
Green shell-edged whiteware	1					1
Classic ironstone	2			3		5
Ironstone	1			3	1	5
Polychrome hand-painted ironstone	2					2
Modern ironstone				2		2
Porcelain		1				1
Rockinghamware				1		1
Blue hand-painted salt-glazed brown stoneware			7			7
Brown glass	1		4		1	6
Brown bottle neck, crown closure					1	1
Clear glass	6	3	2	2		13
Clear 3 cc pharmacuetical bottle			1			1
Clear bottle neck, crown closure			1			1
Clear bottle base	1	1	3			5
Clear bottle glass			3			3
Clear jar, threaded closure			1			1
Clear jar neck, threaded closure				4		4
Flat glass	1					1
Light green glass				4		4

Table 3. Artifacts from Trench 3.

	N194 E120-122, Str. I	N194 E122 124, Str. I	N194 E124 126, Str. III	N194 E128 130, Str. III	N194 E126-128, Str. VI	Total
Light green contour Coke bottle				6		6
Green bottle base			1			1
Milk glass cosmetic jar				1		1
Olive glass	2					2
Opaque blue glass	1					1
Yellow depression glass			1			1
Square nail	4			1		5
Wire nail				2		2
UID nail	3					3
Spike	3					3
Metal cap			1			1
Strap iron		1	1			2
UID metal (count)	1		5			6
UID metal (weight in grams)	3.4		49.5			52.9
Plastic button, 4 hole				1		1
Oyster shell (count)					1	1
Oyster shell (weight in grams)					154.4	154.4
Gravel (count)	5					5
Gravel (weight in grams)	469.9					469.9
Brick (count)				3	1	4
Brick (weight in grams)				324.7	90.3	415
Total	36	7	31	34	5	113

Table 4. Artifacts from Trench 4 and Excavation Unit N193.25 E281.

	N194 E270-272	N194 E272-274	N194 E274-276	N194 E280-284	Str. V, 72-82 cmbd	Str, V, 82-85 cmbd	Str. V, 85-95 cmbd	Str. V, 95-105 cmbd	Str X, 105 115 cmbd	Total
Whiteware								1	1	2
Classic ironstone	1	1		1			3	2		8
Ironstone	1				2	1	16	4	1	25
Porcelaneous stoneware								3		3
Porcelain	2			1			1			4
Brownware							1			1
Unglazed redware flower pot	1									1
Manganese glazed redware							1			1
Stoneware bottle								1		1
Amethyst panelled pharmaceutical bottle glass							3			3
Brown glass	1				1	1	5			8
Clear glass	2			2	5	4	26	4		43
Clear pharmacuetical bottle neck							1			1
Clear bottle base	1									1
Clear jar, threaded closure	3									3
Flat glass				2			15	5		22
Light green glass		1	1			1	10	5		18
Olive glass							8			8
Chrome fragment						1				1
Square nail	2			1		6	28	3	1	41
Wire nail	5			6	17	23	53	5		109
UID nail	3		1	2	26	37	106	7	1	183

Table 4. Artifacts from Trench 4 and Excavation Unit N193.25 E281.

	N194 E270-272	N194 E272-274	N194 E274-276	N194 E280-284	Str. V, 72-82 cmbd	Str, V, 82-85 cmbd	Str. V, 85-95 cmbd	Str. V, 95-105 cmbd	Str X, 105 115 cmbd	Total
Spike		1	1							2
Bolt							1			1
Crown cap							2			2
Metal cap		1								1
Strap iron									2	2
UID metal (count)					2	10		19	2	33
UID metal (weight in grams)					2.1	20.2		150.5	6.1	178.9
Glass button					1					1
Bone						1		26	2	29
Oyster shell (count)						1	1			2
Oyster shell (weight in grams)						91.1	44.2			135.3
Charcoal (count)					3		2	1		6
Charcoal (weight in grams)					2.5		2.8	10.9		16.2
Coal (count)	2	1				1	6		1	11
Coal (weight in grams)	75.8	18.4				0.9	11		7.5	113.6
Wood (count)							1			1
Wood (weight in grams)							1.8			1.8
Brick (count)					1	2	16			19
Brick (weight in grams)					44.4	3.4	31.3			79.1
Misc architectural debris (count)		3			1	2				6
Misc architectural debris (weight in grams)		197.6			1.7	3				202.3
Total	24	8	3	15	59	91	306	86	11	603

Table 5. Artifacts from Trench 5 and Excavation Unit N194 E338.25.

	N194 E335-337, Str. V	N194 E337-339, Str. V	N194 E340-343, Str. V	N194 E343-345, Str. V	N194 E345-347, Str. V	N194 E347-350, Str. V	EU N194 E338.25 Level 1, Str. V	EU N194 E338.25 Level 2, Str. V	Total
Ironstone	1			2	2			1	6
Polychrome hand-painted modern ironstone					1				1
Industrial porcelain							1		1
Rockinghamware	1								1
Stoneware bottle						1			1
Amethyst glass					1				1
Brown glass			3						3
Clear glass		3	1	3		2	3		12
Clear jar neck, threaded closure				1					1
Flat glass	1								1
Green glass			1			1			2
Milk glass						1			1
Milk glass cosmetic jar				1					1
Olive glass				1					1
Brass fragment					1				1
Square nail	6				1	1			8
Wire nail	2		1	2					5
UID nail		1				1			2
Metal cap						1			1
Wire	1								1
Shotgun cartridge base	1								1
1919 nickel					1				1

Table 5. Artifacts from Trench 5 and Excavation Unit N194 E338.25.

	N194 E335-337, Str. V	N194 E337-339, Str. V	N194 E340-343, Str. V	N194 E343-345, Str. V	N194 E345-347, Str. V	N194 E347-350, Str. V	EU N194 E338.25 Level 1, Str. V	EU N194 E338.25 Level 2, Str. V	Total
Bone	2				1				3
Rangia shell (count)							1		1
Rangia shell (weight in grams)							4.9		4.9
Oyster shell (count)	1								1
Oyster shell (weight in grams)	64.4								64.4
Brick (count)	1	1					4	4	10
Brick (weight in grams)	250.8	14.6					113.7	250	629.1
Misc. architectural debris	1						2	3	6
Misc. architectural debris (weight in grams)	17.3						13.4	20	50.7
Total	18	5	6	10	8	8	11	8	74

Figure 39. Artifacts from EU N193 E79. A) and C) blue shell-edged whiteware; B) blue transfer-printed whiteware; D) blue transfer-printed pearlware; E) annular whiteware; F)slate pencil; G) mulberry transfer-printed whiteware.

Figure 40. Fragments of a brown salt-glazed stoneware crock from Trench 3, N194 E124-126.

Figure 41. Exterior view of reconstructed polychrome hand-painted modern ironstone measuring cup from Trench 1, N192 E27.

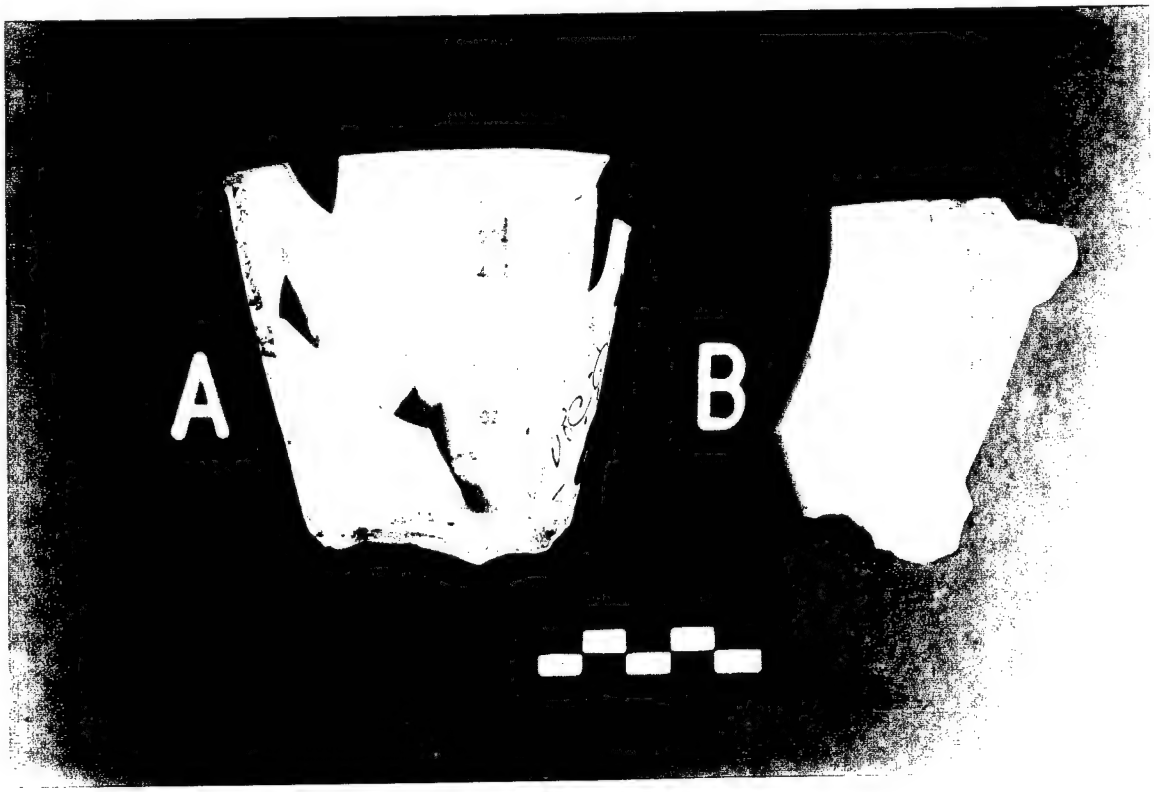


Figure 42. Interior view of reconstructed measuring cup.

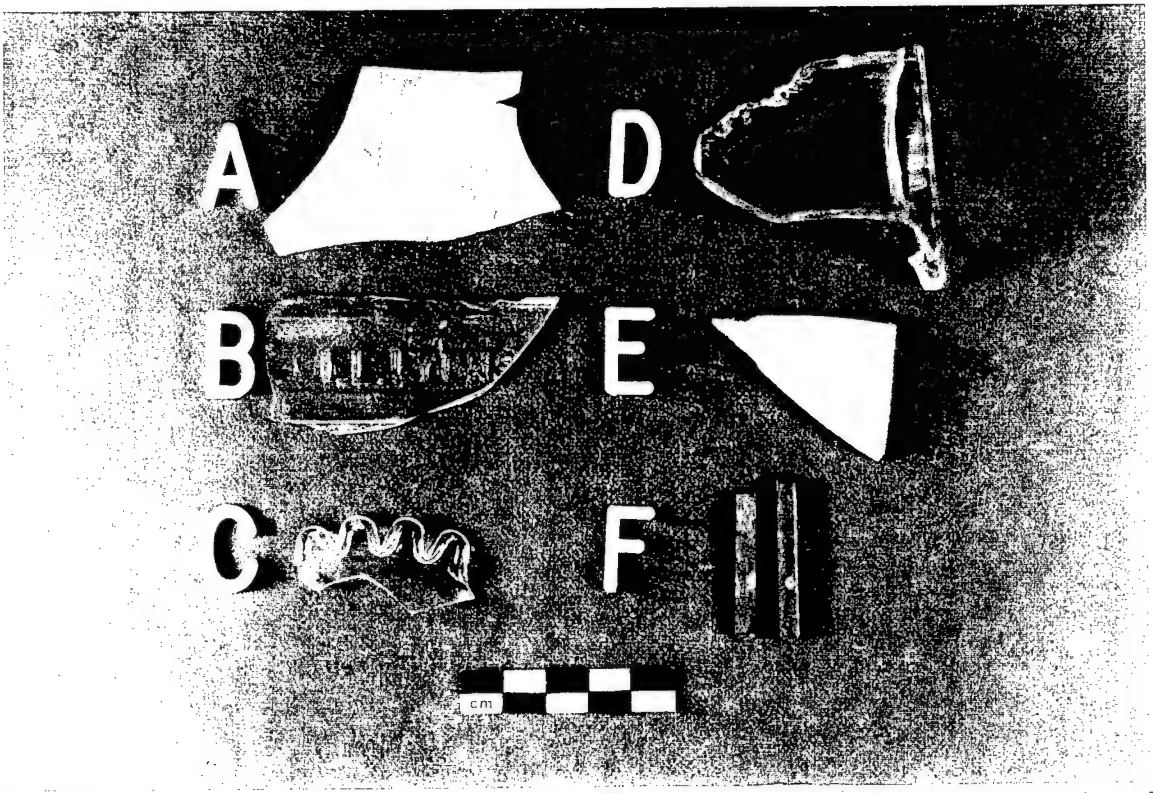


Figure 43. Selected artifacts from EU N193 E79, Level 4. A) embossed opaque glass; B) embossed paneled pharmaceutical bottle glass; C) crimped-top lamp glass; D) paneled pharmaceutical bottle base; E) ironstone; F) slate pencils.

Figure 44. Graduated pharmaceutical bottle recovered from Trench 3, N194 E124.

Table 6. Fauna from 16AN54.

	Trench 2 N194 E82 85	Trench 2 N193 E79 Level 1	Trench 2 N193 E79 Level 2	Trench 2 N193 E79 Level 3	Trench 2 N193 E79 Level 4 upper midden	Trench 2 N193 E79 Level 4 lower midden	Trench 2 N193 E79 Level 5	Trench 4 N193.25 E281 Level 2	Trench 4 N193.25 E281 Stratum 5 Level 1	Trench 4 N193.25 E281 Stratum 5 Level 2	Trench 4 N193.25 E281 Stratum 6 Level 1	Trench 5 N194 E335-337	Trench 5 N194 E345-347	Total
UID Vertebrate		1				2			1					4
UID Mammal	2	4	4	8	14	4	1	1	12	21	1	1	1	74
Sus scrofa		1	2		2		1			4				10
Bos taurus									1		1			2
Sciaenidae			1											1

Table 7. Proveniences for Soil Samples.

Unit	Stratum	Depth (Below Surface)	Sample Size
EU N193 E79	Stratum IVb	65-75 cm	10 l
EU N193 E79	Stratum IX	85-90 cm	10 l
EU N193.25 E281	Stratum V	82-85 cm	10 l
EU N193.25 E281	Stratum V	95-105 cm	10 l
EU N193.25 E281	Stratum X	105-115 cm	10 l

Variants of annular decoration include mocha and finger-painted decoration, both of which also include bands of multi-colored slips. The latter consists of colored slips which are swirled together to give a marbled effect. Mocha decoration is so named because it resembles the dendritic patterns of quartz from Mocha on the Red Sea. The brown, fern-like pattern is produced by a tobacco infusion in stale urine and turpentine which is applied to the colored-slipped body (Van Rensselaer 1966:337). Both are found on creamware from the 1790s to the early-nineteenth century.

Wedgwood developed pearlware from creamware by 1779. Noel Hume (1969:390; 1970:128) notes that although the pearlware paste contains more flint than that of creamware, the cream-colored earthenware pastes of the two are virtually identical (Sussman 1977:105). However, the lead glaze of pearlware is tinted with cobalt oxide. The cobalt has the effect of whitening the appearance of the cream-colored earthenware body of pearlware.

Unlike creamware, pearlware was usually decorated. One of the most common forms of decoration on pearlware is shell-edging. This consists of a molded, shell-like rim that is decorated with either blue or green hand-painting. While Noel Hume (1970:131) states that eighteenth-century examples tend to be finely painted with individual brush strokes evident on the rim, and that later pieces are less well-executed, Sussman (1977:108) did not find these criteria helpful for dating. Instead, she suggests that eighteenth-century traits include a flat rim which may have an upturned brim and which have sharply defined edges. Bases are either flat, countersunk, or have a rounded ring foot. Nineteenth-century examples are more similar in appearance to whiteware (below). Traits include concave or S-shaped rims with rounded edges and wedge-shaped or double-ridged foot rings (Sussman 1977:109). In addition, nineteenth-century pearlware sometimes exhibits a variety of fronds, garlands, and floral devices molded on the edge and painted in blue or green (Sussman 1977).

Transfer-printing is also frequently found on pearlware (Figure 39D). The technique of transfer-printing was developed in the mid-eighteenth century. It involved engraving a plate with the desired pattern and printing it on tissue paper. The paper was laid on the vessel, transferring the pattern to the piece. Blue transfer-printed pearlware was first produced in quantity in the 1790s. Blue was by far the most common color utilized in transfer-printing because cobalt is the most stable of the coloring oxides. The perfection of printing colors such as red, brown, and purple underglaze was not achieved until the late 1820s (Majewski and O'Brien 1987:119, 139).

The decoration on pearlware was often hand-painted underglaze, either in blue (often oriental motifs, and less frequently in floral patterns) or in polychrome floral and geometric patterns. While blue hand-painted pearlware was produced from the inception of the ware, polychrome hand-painting on pearlware did not occur until ca. 1795 (Noel Hume 1970:129).

White-colored earthenware was the result of the introduction of increasing amounts of cobalt into the cream-colored ceramic paste during the early-nineteenth century. The bodies of these ceramic vessels became thicker and coarser over time; the net effect of this whitening of the paste was a reduction in its plasticity. The result of these changes distinguishes white-colored earthenware from cream-colored earthenware. During the first quarter and into the second quarter of the nineteenth century, the white-colored earthenware body frequently was covered with a cobalt tinted glaze typical of pearlware. Ultimately, the use of cobalt additives in the glaze was reduced, and by the end of the first quarter of the nineteenth century, a white-colored earthenware paste with a clear glaze was being produced. This type commonly is referred to as whiteware.

Sherds transitional between pearlware and whiteware are often found. As was the case with pearlware, these ceramics were usually decorated. Decoration found on transitional

white-colored earthenware includes techniques found on pearlware such as annular banding (Figure 39E), finger-painting, shell-edging (Figure 39A and C), polychrome hand-painting, blue hand-painting, and transfer-printing (Figure 39B and G). The transfer-print palette was expanded ca. 1830 to include colors such as red, green, brown, and purple. Spatter (or sometimes called sponged) decoration also is found. Introduced in the 1820s, the earliest spatter decoration was produced by spattering paint from a full brush on the vessel using a stencil. Reserved areas were often hand-painted (Ray 1974:211-212; Majewski and O'Brien 1987:161-162).

Whiteware also received a wide variety of decoration. Transfer-printing in a variety of colors is the most common decorative treatment found on whiteware. In addition, a variation on transfer-printing, flow blue, is often recovered. This decoration was produced by the deliberate introduction of a chlorinated vapor into the kiln, which blurred the transfer-print. Patterns on later examples tend to be more distinct than those on earlier pieces. Introduced ca. 1825, flow blue was utilized on whiteware and ironstone (below) into the early-twentieth century. Flow purple and flow brown were also produced in lesser quantities (Ray 1974:69).

Other decoration seen on whiteware includes annular, mocha, finger-painting, shell-edging, blue and green edging, blue hand-painting, polychrome hand-painting, and spatter. Stamped decoration, in which a cut sponge was used to apply pigment to the vessel (Ray 1974:212), also is found in contexts post-dating 1845 (Majewski and O'Brien 1987:161).

Another white-colored earthenware popularized during the mid-nineteenth century in America and England was variously referred to as ironstone, stone china, and white granite (Figure 43E). This type also has a refined white-colored earthenware paste. Worthy (1982:335-337) classifies it as a white stoneware, yet states that the body is "almost vitreous." Since stonewares by definition are vitrified, this precludes the classification of ironstone as a stoneware.

It should be noted that Worthy (1982) is correct in stating that whitewares are easily distinguished from later ironstones. Unfortunately, distinctions between the two types at mid-century are less clear. While it seems that sufficient differences exist between whiteware and ironstone in terms of paste composition, permeability, body thickness, decoration, and surface color to justify their segregation, it is equally clear that these differences form a continuum between the two types, just as pearlware gradually grades into whiteware. Barber (1902:19) states that the formula for ironstone is similar to that used in all white ceramic wares, namely flint, feldspar, kaolin, and ball clay.

As stated above, ironstone was developed in England and was produced in the United States at a slightly later date (Ramsey 1947:153). Miller (1991:10) has indicated that it was being imported to the United States by the 1840s. It has a hard white, and often thick and heavy ceramic body. It is semivitreous, whereas whiteware is nonvitreous. Ironstone fractures evenly and smoothly. The surface appearance is hard and smooth, usually with an opaque-looking glaze with a blue-gray cast. It is frequently undecorated, or decorated with only molded relief. However, transfer-printing is not uncommon, particularly on late-nineteenth- and early-twentieth-century examples. Decorative motifs usually consist of floral patterns, unlike the primarily scenic transfer-prints found until the mid-nineteenth century on pearlware and whiteware. Decalcomania is also common after ca. 1900. In addition, ironstone is sometime found with gilt decoration.

Heavy-bodied ironstone declined in popularity at the end of the nineteenth century in favor of lighter-weight, usually decorated, semivitreous wares. However, the heavy-bodied ware was still readily available at least as late as 1895 (Majewski and O'Brien 1987:123-124). A comprehensive discussion of the complexities of nineteenth-century white-bodied ceramic

production is beyond the scope of this study, and the reader is referred to Majewski and O'Brien (1987) for further information. However, in an effort to refine the late-nineteenth-century ceramic chronology, three separate categories of ironstone are identified herein: "classic" ironstone, ironstone, and "modern" ironstone. Classic ironstone is defined as having a thick, heavy body and a blue-gray cast. The date range of 1850 to 1900 is proposed for this category; it is anticipated that data from closely-dated contexts will refine the upper end of this range. The category "ironstone" encompasses the terminal-nineteenth/early-twentieth-century, thinner and lighter semivitreous wares as well as sherds deriving from thin sections of classic ironstone vessels. Thus, it is something of a catch-all category, and has been assigned a date range from 1850 to at least 1920. "Modern" ironstone will be used to identify all semi-vitreous wares distinctly modern in appearance; these are dated to post-1930 (Figures 41 and 42). Of course, individual sherds with decorations that date them more precisely than these broad ranges were treated accordingly.

The paste of red-colored earthenware ranges from deep red-brown to orange to pink depending on the amounts of impurities in the clay and the firing temperature and atmosphere. The body, which is fired at low temperatures, is usually light and porous; complete vitrification cannot be achieved with pure earthenware clays. Consequently, redwares tend to be more fragile than stonewares or porcelains (Rhodes 1973:47).

Because red-colored earthenware clays are widely available and because they become hardfired between 950-1100^{o} (Rhodes 1973:22), utilitarian redwares are ubiquitous and, with some exceptions, relatively non-diagnostic for dating purposes. Since the ceramic is porous, it was usually glazed to make it impermeable to liquids. Unglazed, redware was (and is) used for flower pots and water coolers. Most commonly redware is found with a clear lead or alkaline glaze. Glazes tinted with coloring oxides are also frequently found. Slip glazes may be found on redwares, but only when the red-colored earthenware clay has been combined with more refractory clays, such as stoneware or fire clay. This is because slip glazes generally need higher firing temperatures than red-colored earthenware clays can tolerate before melting. Frequently redwares are covered with an engobe (a slip used to change the surface color) prior to glazing.

Yellow-colored earthenware is an American coarse utilitarian body type. The paste in fact consists of stoneware, not earthenware clays, but the ware is classified as an earthenware because it is not fired to vitrification. The paste ranges from soft and porous in low-fired examples to nearly vitrified pieces which have been fired at high temperatures. The paste color is buff to brownish yellow, and varies with the amounts and types of impurities in the clays and with the firing temperature. Surface treatment of the vessels varied with function. The variant known as yellowware is covered with a clear glaze. It was molded into a variety of utilitarian forms such as bowls, jelly-molds, pitchers, and mugs. After 1840, it is frequently found with annular bands in white, brown, and blue, as well as mocha decoration in blue or brown (Ramsey 1947:148-150). Yellowware was produced into the twentieth century.

Yellow-colored earthenware also is found with a tortoiseshell brown glaze produced by mixing manganese and iron oxides into the glaze. Known as rockinghamware, the type was molded into a variety of decorative and utilitarian shapes. Dates of manufacture were between ca. 1830-1900, but the height of rockinghamware's popularity was the mid-nineteenth century.

Yellow-colored earthenware sometimes was covered with an Albany slip, or a similar dense, brown-to-black matte slip glaze. This variant was more commonly known as brownware, and was most often utilized for straight-sided crocks and storage vessels. Generally wheel-thrown, brownware was produced between ca. 1830 and 1900. Brownware is occasionally unglazed. This variant was manufactured ca. 1840-1875 (Ramsey 1947:144). Bristol glazes, which utilize zinc oxide as their primary fluxing agent, also are found on brownware.

The Bristol glaze is opaque, off-white, and frequently exhibits pits and pinholes (Rhodes 1973:180). Bristol-glazed brownwares generally occur in late-nineteenth/early twentieth century contexts.

Another variant of yellow-colored earthenware is late spatter. Also referred to as "late sponged," it was manufactured in the late-nineteenth and early-twentieth centuries. Produced for utilitarian purposes, late spatter consisted of blue sponged decoration on an opaque white (Bristol glaze) or opaque light blue ground (Ray 1974:114).

Stoneware pastes range in color from white-gray or buff to deep gray and brown. Stoneware clay becomes vitreous between 1200-1300 degrees, and it has a smooth and stony appearance (Rhodes 1973:22). The most common surface treatment of stoneware is salt glazing (Figure 40). The raw ceramic is fired until the clay matures, at which point salt is added to the firebox. The vaporized salt is then deposited on the ware, producing a thin, bright, hard glaze with an orange-peel texture (Rhodes 1973:285).

Stoneware was first commercially produced in the United States ca. 1775, and use of these heavy, gray or brown bodied, wheel thrown utilitarian vessels became widespread during the nineteenth century. Because the salt vapor did not adequately penetrate the interior of vessels, an Albany slip, developed ca. 1810, often coated the interior of American salt-glazed stonewares produced after this date (Figure 40B). Salt-glazed stoneware is often undecorated, or decorated with cobalt or manganese hand-painting. The application of an engobe, or slip to change the surface color of a vessel prior to glazing was also common, as was exterior brown slip glazing. The fact that stonewares were often produced in small local potteries contributes to the large amount of variation seen in these vessels.

"Porcelaneous stoneware" is a classificatory term suggested by Worthy (1982) to describe a type that embodies traits of both stoneware and porcelain. Although use of this term has been rejected by Majewski and O'Brien (1987:106), it seems appropriately descriptive. Also known as semi-porcelain and hotel china, it was developed in the United States after 1880 for table use. However, Majewski and O'Brien (1987:124) indicate that it may not have been used in the home until the twentieth century. It contains both kaolin and ball clay, and is fired between 1200-1400 degrees (Worthy 1982:337). It is very white, dense and completely vitrified, but unlike porcelain, it is opaque.

Hard-paste porcelain is completely vitrified and translucent. It is made from kaolin and petunse (feldspar, or potassium aluminum silicate), and it approaches a glass in composition because of the high firing temperature (1300-1450^{o} C.). The paste tends to fuse with the feldspathic glaze during firing. The ware fractures conchoidally. The surface appearance is hard and smooth, and the surface color ranges from very white to white with a gray, blue, or green cast (Miller and Stone 1970:81; Noel Hume 1970:257-263). Porcelain can receive a variety of surface treatments, although only cobalt decoration may be applied underglaze due to the heat necessary to mature the clay.

Soft-paste porcelain differs from hard-paste porcelain in the use of fluxing agents, such as ground glass frits or bone ash, to lower the firing temperature required to mature the clay. The color of soft-paste porcelain ranges from white to pale buff. While the paste is vitreous, it has a somewhat granular texture. There is a clear division between paste and glaze when viewed in cross-section, and it is somewhat less translucent than hard-paste.

Hard-paste porcelain was first manufactured by the Chinese in the eighth century (T'ang Dynasty). Chinese porcelain came into such demand that, by the eighteenth century, Oriental potters were manufacturing porcelain exclusively for export to western markets. Oriental porcelain is found in British colonial contexts as early as the first half of the seven-

teenth century (Noel Hume 1970:257). It is also recovered on French (Miller and Stone 1970:81) and Spanish colonial period sites (Deagan 1987).

The first European hard-paste porcelain was produced at Meissen in 1709. Soft-paste porcelain manufacture began in France in the late-seventeenth century, and in 1769 hard-paste was first produced at Sevres. Soft-paste porcelain manufacture also began early in England at Bow, Chelsea, and Derby. In addition to the use of glass frits, bone ash was utilized as a flux in England as early as 1750. Spode is usually credited with perfecting and standardizing the English "bone china" formula ca. 1790. The discovery of kaolin deposits in Cornwall led to the founding of the Plymouth factory in 1768, which produced the first English hard-paste (Wynter 1972; Cotter 1968).

By the later-nineteenth century, relatively inexpensive porcelains were being mass produced for the American market by manufacturers such as Haviland and Company. Undecorated French porcelains provided competition for American and British ironstones during this period. Commercially successful hard-paste porcelains were not manufactured in the United States until ca. 1880.

Classification of Glass. All glass recovered from 16AN54 was sorted by color. Whole bottles and diagnostic fragments were described by presumed function and/or shape (Wilson 1981:110; Haskell 1981:Figure 32; Baugher-Perlin 1982) wherever possible. Variations in lip finishes were also described. Manufacturing attributes present on individual bottle and bottle fragments were listed. A summary chronology of changes in bottle manufacture is presented below.

Prior to the nineteenth century, the majority of glassware was hand-blown. Characteristics of hand-blown glass include the absence of mold seams and an asymmetrical vessel shape. Alternately, bottles were blown into a one piece dip-mold to form the vessel body, while the neck and shoulders were hand finished. This technique came into common use during the mid-eighteenth century and continued to be utilized until the mid-nineteenth century.

Both hand-blown and molded bottles were held by pontil during finishing. Attached to the vessel base, pontils left characteristic scars. One variant is the blow pipe pontil. The blow pipe pontil exhibits a rough ring of glass; it is produced by utilizing the blow pipe as the pontil rod. Thus, the molten glass from the neck creates the characteristic scar on the base. The rough pontil, by contrast, has a circular rather than ring-shape scar of glass. Sand-tipped pontil scars are rough and often exhibit sand adhering to the vessel base. They are the result of covering the glass-tipped rod with sand (Jones 1971). In addition, the bare-iron pontil was in use during the period of 1845 to 1880. The scar resulting from this technique is smooth with an iron-oxide residue. The snap case, which held the bottle by its body, was introduced ca. 1849 (Jones and Sullivan 1989:46). It replaced the bare-iron pontil in most glass houses by the 1870s (Baugher-Perlin 1982:267).

Molds to shape the shoulders and the necks of vessels as well as the body came into general use during the 1810s and 1820s. Two-piece molds were hinged at the base, and the resultant bottle had mold seams running across the base and up the sides of the vessel. Frequently, the base seam was obliterated by the scar from the pontil used to hold the vessel while the mouth and neck were finished (Baugher-Perlin 1982:263; Haskell 1981:29)

Two-piece molds were introduced for small bottles in the second half of the eighteenth century. Around 1850, two-piece molds were improved by the addition of cup bottoms and post bottoms to form the base (Haskell 1981:62; Lorraine 1968:40), and these replaced the earlier hinged type by 1880 (Jones and Sullivan 1989:27). Cup bottoms are characterized by a

mold seam which encircles the bottom of the vessel body. A post bottom has a circular seam on the base itself, and the side seams extend over the base edge to meet it. Variant of this cup-bottom bottle included three- and four-piece hinged molds for unusually shaped or highly decorated containers.

Another type of molded bottle is the so-called "Ricketts" bottle. Also formed in a three- or sometimes four-piece mold, Ricketts bottles are distinguished by a dip-molded body. Two matching mold pieces were used to form the shoulders and neck, while occasionally a fourth mold was used to shape the base. A horizontal mold seam is located at the body/shoulder junction, and two vertical mold seams are present on opposite sides of the shoulder. The bottle body lacks mold marks or decoration. The Ricketts mold was also used exclusively for dark green liquor bottles between 1821 and 1840 (Jones and Sullivan 1989:30).

During the eighteenth and nineteenth centuries, bottle lips were cut off with shears while the glass was still soft. These sheared lips are characterized by an abraded plain cylindrical top. Frequently a bead of glass was laid on the neck beneath the lip of the vessel. By the mid-nineteenth century, bottle lip finishing techniques had been improved. The tooled lip was one such method. The lipping tool consisted of a central piece placed within the bottle neck and an external arm, which, when rotated, shaped an even lip from the soft glass applied to the mouth of the vessel. Use of this technique tended to obliterate the neck seams of the vessel as a consequence of reheating and finishing.

Blow-back molds were introduced in the mid-nineteenth century for the purpose of producing complex finishes, such as threaded closures. The mold permitted the vessel to be easily broken from the blowpipe, which generally left a ragged top which had to be ground smooth. Bottles produced in such molds had seams which went to the top (Munsey 1970:40) or nearly to the top (Baugher-Perlin 1982:Figure 11.2C) of the vessel. Patented by Mason, this manufacturing technique was used for fruit jars and bottles between ca. 1850 and 1920.

Turn molds were utilized, particularly for the manufacture of wine bottles, during the period from 1870 to the 1920s. The bottle was turned within the paste-coated mold, which obliterated the seams. The process tended to leave horizontal striations on the bottle (Baugher-Perlin 1982:265), and a highly polished surface.

At the end of the nineteenth century, a variety of semi-automatic manufacturing processes were introduced. These all involved manual operations at some point along the manufacturing sequence (Toulouse 1971:528-542). Michael Owens patented a fully automatic bottle machine in 1903. This eliminated all hand labor from bottle manufacture. Suction was used to draw the molten glass into the mold, and the resulting bottles have ring seams around the base and side seams which extend over the lip. By World War I, the vast majority of bottles were produced by this method (Figure 44).

Considering that blow-back molds also produce seams that extend to the top of the vessel, this attribute alone does not distinguish an automatically produced bottle. However, the presence of valve marks (indented circles on bases measuring 1.27 to 2.22 in diameter), suction machine cut-off scars (irregular, frequently feathered circular marks on the bottoms of Owens-machine-produced vessels), ghost seams, and one or more horizontal seams on the bottle top and neck are diagnostic (Munsey 1970:38-45, Baugher-Perlin 1982:265-266). Despite this, some bottles may be ambiguous; for example, beverage bottles generally were fire-polished to remove the horizontal seams which indicated automatic manufacture. For the purposes of this study, ambiguous bottles were assumed to be automatically produced when recovered in contexts containing other twentieth-century material (Munsey 1970:41).

In addition to manufacturing techniques which produce datable attributes, certain glass colors provide some chronological information. For example, "opaque black" glass, which was utilized primarily for liquor bottles, was common throughout the eighteenth century and until the late-nineteenth century. The glass is actually dark green, but the thickness of the vessel gives the impression that the glass is opaque black in reflecting light (Jones 1971:11).

Also, most clear glass prior to the Civil War was lead crystal. The introduction of improved lime glass in 1864 provided an inexpensive alternative (Haskell 1981:28). Consequently, clear glass is more common from the second half of the nineteenth century onward.

Finally, manganese oxide came into wider use as a decolorizing agent in the final third of the nineteenth century. Use of this oxide to clarify glass continued through World War I. Glass treated with manganese oxide tends to become amethyst colored when exposed to sunlight (Toulouse 1969:534).

Classification of Nails. Generally, nails are only broadly datable. Prior to 1790, all nails were hand wrought. A variety of different wrought nails were manufactured. These can be defined by the shape of their heads (i.e. rose-headed, t-headed, l-headed, and headless).

Between 1790 and the 1830s, early machine cut square nails came into general use. Machine cut square nails with wrought heads were manufactured between about 1790 and 1815, after which square cut nails with machine made heads appeared. This type, which continued to be manufactured until the 1830s, had somewhat irregular heads and a "wasted," rounded shank under the head. Square cut nails with machined heads that lacked the "wasting" characteristic of the above appeared ca. 1820 (Nelson 1963; Noel Hume 1970:252-254).

Additional nail attributes which provide chronological information include cut marks and the direction of the metal fibers in the nail shaft. Prior to 1820, the cutting of the nail shafts produced burrs on diagonal corners of the nail shaft. After this date, the burrs appear on adjacent nail corners. In addition, prior to ca. 1830, the metal fibers of the nail run horizontally to the shaft. After ca. 1830, they run vertically to the shaft. Wire nails were introduced ca. 1850, and they began to replace square cut nails by the third quarter of the nineteenth century (Nelson 1963; Noel Hume 1970:252-254).

Buttons. Manufacture of ceramic buttons was patented in Great Britain in 1840 but was not common in the United States until after 1860. Ceramic buttons are still manufactured (Castille et al. 1982:5/110). One plastic button was collected; this dates to the twentieth century. It should also be noted that one ceramic shirt stud was collected. These were utilized at least into the 1920s (Rose and Santeford 1987:41).

Marbles. Glass marbles were first produced in Germany for export in 1846. These marbles were hand-made. Hand-made glass marbles can be distinguished by irregular spots on opposite sides produced by the grinding down of the scars where the marble was cut from a glass rod (Randall 1971:104).

Machine-made marbles were introduced in 1901 and were being produced in quantity by 1905. Those produced until about 1926 display a single roughened spot resulting from cutting and grinding, while those produced after that date are indistinguishable from modern marbles (Randall 1971:105). The marbles collected from 16AN54 all appear to postdate 1926.

Artifact Analysis

As demonstrated by Tables 1 through 5, while the five backhoe trenches varied somewhat in the frequencies and types of artifacts represented, the collections from all proveniences were composed primarily of ceramics, glass, and nails. The collection from Trench 1 was the smallest and overall contained the most recent material; with few exceptions, the chronologically diagnostic artifacts dated to the twentieth century (Table 1). All of the ironstone from the trench dated to the twentieth century, and the vast majority of it derived from a single hand-painted measuring cup (Figures 41 and 42). The Milk of Magnesia bottle dates to this century, as do the marbles, which lack the grinding scars indicative of pre-1926 manufacture. The high frequency of clear glass is also typical of twentieth-century assemblages. Other artifacts, including the aluminum can fragments and pop-tops (post 1960s) as well as the modern soda bottle fragment, suggest deposition subsequent to the 1931 levee setback.

By contrast, the ceramics from Stratum VII in Trench 2 and EU N193 E79 were the earliest collected at the site (Table 2). Mean ceramic dating was undertaken for the ceramics from this trench and this unit. Mean ceramic dating is essentially a seriation technique, since it is based on the assumption that ceramic types exhibit a unimodal distribution through time (South 1972:73-74). Using temporal information provided by Noel Hume (1970), South (1972, 1977:201-236) presented manufacturing date ranges for 78 ceramic types. South assumed the midpoint of manufacture for each type was its popularity peak, and assigned this as the "median date." The mean ceramic date (Y) is then calculated by the formula:

$$Y = \frac{\sum_{i=1}^{n} X_i * f_i}{\sum_{i=1}^{n} f_i}$$

where X_i is the median manufacture date; f_i is the frequency; and n is the total number of ceramics used in the calculation.

South (1972) developed this technique for use on eighteenth-century Anglo-American sites, but he encouraged expansion of the concept to include other data sets. Later he presented date ranges, median dates, and index dates (adjustments to the median dates) for majolica types based on Goggin's (1968) research (South 1977:238-247). Other investigators have modified the formula for use in nineteenth-century contexts (McCloskey 1979; Lofstrom et al. 1982; Yakubik 1990). However, without substantial numbers of ceramics with dated marker's marks, dates yielded for terminal-nineteenth and twentieth-century contexts generally tend to be too early. The relative validity of the dates may be evaluated by comparison with those indicated by other chronologically diagnostic artifacts, such as bottle glass.

The ceramic collection from Trench 2 yielded a mean ceramic date of 1856.5 (n=58). The presence of ironstone in the lower midden in EU N193 E79 suggests that this date is probably somewhat too early, and that the pearlwares found within Stratum VII in this area probably represent relic use. Then too, the relatively high frequency of clear glass in the upper midden also indicates a somewhat later date. As noted in Chapter 7, the artifacts likely derive from occupation of the Trasimond Landry plantation. The heavy concentration of nails seen in Stratum VIII of Trench 2 as well as the presence of flat (pane) glass and a pintle suggests that a structure or structures were formerly in this area.

The fact that this small collection from Trench 2 and EU N193 E79 includes relic types suggests that the midden in this area probably derives from the plantation's laborers quarters rather than the manager's residence. Then too, the recovery of buttons from this area may

also support the argument that the artifacts are associated with the quarters complex. High frequencies of buttons are typical of African-American residential contexts. It has been suggested that they were utilized for adornment, as game counters, and as charms (Yakubik et al. 1994).

Although the collection from Trench 3 also contains relic ceramic types (one sherd each of creamware and pearlware, Table 3), it is clearly earlier than that from Trench 2. The ceramics yielded a mean date of 1876.2 (n=20). Again, this date is too early; bottle glass from Trench 3 clearly indicates that occupation in this area extended well into the twentieth century, as might be expected. Diagnostic twentieth-century glass includes Depression glass, bottle lips with crown cap closures, and a contour Coca-Cola bottle. In addition, one clear bottle base had an Owens-Illinois mark dating to the period 1929-1954 (Toulouse 1971:403).

The ceramics from Trench 4 and EU N193.25 E281 yielded a mean ceramic date of 1884.6 (n=39). As was the case with the collection from Trench 3, other artifacts from Trench 4 indicate that this date is too early (Table 4). One clear bottle base has a mark of the Chattanooga Bottle and Glass Co. which post dates 1927 (Toulouse 1971:108). Similarly, the crown cap fragments date to the twentieth century. Despite the fact that no substantial structural remains were found in the trench or the unit, the numerous nails and flat glass fragments indicate that one was formerly in the near vicinity. It should also be noted that the vast majority of identifiable nails were wire nails (Table 4).

As was the case in the artifacts from all but Trench 2, clear glass comprised the majority of the glass collection. Interestingly, amethyst glass was relatively rare at the site. This might indicate that the majority of glass found at the site was deposited after World War I. Alternatively, and perhaps more likely, it might indicate that glass at the site did not become solarized; that is, it was deposited primarily in covered contexts.

With the exception of a single 1919 Indian head nickel, the collection from Trench 5 and EU N194 E338.25 provided little precise chronological information. Other material from this area dated generally to the late-nineteenth/early-twentieth century; there were too few ceramics to attempt mean dating. The one notable aspect of this collection is that relatively little flat glass and nails were recovered given the proximity of this unit to a structure.

In addition to the classification of ceramics, minimum numbers of vessels at the site were estimated. All proveniences were combined to determine the minimum number of vessels present in the collections. One advantage to this technique is that it provides a more realistic idea of the number of whole dishes or vessels actually represented in an assemblage. A single plate may break into dozens of sherds, but those sherds still only represent one item. Similarly, utilizing minimum vessel estimates rather than sherd counts serves to equalize categories somewhat when undertaking functional analyses. Functional classifications often are over-weighted toward "kitchen" artifacts, which most ceramics represent[1]. A minimum vessel count also is necessary prior to undertaking economic scaling of nineteenth-century ceramics (Miller 1980, 1991). In addition, minimum vessel estimates tend to equalize within-category comparisons. For example, a whole plate and several fragments of a bowl are recovered from a hypothetical site. If numbers of sherds are utilized for the purposes of frequency calculation, one might come to the erroneous conclusion that more bowls were present at the site.

Table 8 presents the minimum ceramic vessel estimates for the site. While comparison of artifacts from the two midden deposits at the site would have been ideal, the small sample

[1] functional analysis was not undertaken because a large proportion of the artifacts were recovered from non-controlled contexts, i.e. the trenches

Table 8. Minumum Numbers of Vessels, 16AN54

	Plate	Bowl	Cup	Saucer	Hollow Ware	Serving Vessel	Measur-ing Cup	Crock	Chamber pot	Bottle	UID Vessel	Total
Creamware									1			1
Annular pearlware		1										1
Blue shell-edged pearlware	1											1
Green shell-edged pearlware	1							1				2
Blue transfer-printed pearlware											2	2
Whiteware	2											2
Annular whiteware		3										3
Green shell-edged whiteware	1										1	2
Blue shell-edged whiteware	3											3
Polychrome hand-painted whiteware											1	1
Black transfer-printed whiteware					1							1
Blue transfer-printed whiteware	1				1							2
Red transfer-printed whiteware	1											1
Green transfer-printed whiteware					1							1
Mulberry transfer-printed whiteware					1							1
Classic ironstone	3		2	1		1						7
Ironstone	2	1	1	5								9
Modern ironstone	1	1										2
Polychrome hand-painted modern ironstone	1	1					1				1	4
Rockinghamware	1										1	2
Stoneware bottle										2	1	3
Porcelaneous stoneware	1		1									2
Porcelain	1		2	1							1	5
Decaled porcelain	1											1
Rockinghamware											1	1
Brownware											1	1
Manganese glazed redware											1	1
Grey salt-glazed stoneware								1				1
Blue hand-painted salt-glazed brown stoneware								1			1	2
Salt-glazed brown stoneware, Albany slip int.								1				1
Total	21	7	6	7	4	1	1	4	1	2	12	66

(n=6) from Trench 2, Stratum IX precluded this possibility. A total of 66 vessels representing 30 ceramic types were recovered from the Darrow site. Not surprisingly, 70% of the vessels were tableware (n=46), and the majority of these were plates (54%, n=25). Relatively few vessels were associated with food preparation and storage (11%, n=7). In addition, one creamware chamber pot was identified.

Faunal Analysis

The faunal assemblage from Darrow (16AN54) consisted of 91 fragments of bone (Table 6). Five animal taxa were identified in the collection. The most numerous category was that of "UID Mammal" which included 74 fragments. Only four fragments of bone were so poorly preserved that they could not be assigned to a particular class of animals. These fragments were defined as "UID Vertebrate". A single pig (*Sus scrofa*) was identified from 10 fragments, mostly teeth. Also a single cow (*Bos taurus*) was identified from a metacarpal and a fused radius and ulna. Additionally, a fish otolith was recovered from the site. This otolith came from a member of the Sciaenidae (drum) family. This otolith could be from a large freshwater drum (*Applodinotus grunniens*); but most likely comes from one of the saltwater drums.

A number of bones from the pig, cow, and UID Mammal exhibited cut marks and sawing. These marks resulted from butchering the animal carcasses. A larger and more diverse sample would be required to address issues of on site butchery versus store bought meats.

Due to the small size of the faunal assemblage and the limited archaeological contexts represented, it is difficult to make any definitive statements concerning dietary practices at Darrow. Occupants were consuming steak and roast cuts from both pigs and cows. The presence of the drum otolith could indicate ocean fishing by site inhabitants or that Darrow had a fish market where fish could be purchased. Further archeological research at the site could produce a much larger faunal collection which could be used to address numerous dietary issues of late nineteenth and early twentieth century communities.

CHAPTER 9
RECOMMENDATIONS

NRHP test excavations at the Darrow site (16AN54) have demonstrated that the site is eligible for nomination to the National Register of Historic Places under Criterion D. Criterion D states that a historical property is eligible for inclusion to the NRHP if the property "has yielded, or may be likely to yield, information important in prehistory or history" (National Park Service 1982:1). Archeological investigations at the site have conclusively demonstrated the presence of three distinct midden deposits. These deposits are vertically, and in some cases, horizontally, discreet. Furthermore, investigations have revealed the presence of intact structural features associated with a commercial establishment and with a residence. Thus, this site has the potential to yield information concerning the development of a small river town. Data from the site may be utilized to address the themes of the "Influence of the Mississippi River on Historic Settlement" and "Euro-American Influence on the Landscape" identified in Louisiana's *Comprehensive Archaeological Plan* (Smith et al. 1983:95-97). Furthermore, the presence of intact midden and *in situ* structural features demonstrates that the site possesses the quality of integrity necessary for nomination to the NRHP.

The period of significance of the Darrow site (16AN54) dates from 1865 to 1932. The earlier date corresponds to the earliest known occupation for the site and is based on dated artifactual material. The later date corresponds to the razing of a portion of the community of Darrow prior to the construction of a new levee in 1932. Data sets present or potentially present at this site include diagnostic material culture, structural remains, and secondary refuse deposits (middens). The diagnostic materials may be useful in refining the temporal range of occupation established for this site. The structural remains, conjoined with the chronological data, may be useful in investigating diachronic and/or synchronic activity patterning at the site. The refuse middens will, in addition to the other information, be useful in addressing questions related to socioeconomic status and subsistence in a small community. Therefore, archeological data recovery is recommended in that portion of the site to be impacted by the proposed levee enlargement and concrete slope pavement construction. This data recovery program would mitigate the adverse impacts to intact deposits located within the area to be impacted by construction. A research design for data recovery is presented below.

Research Design For Archeological Data Recovery

Research Issue 1. The Material Culture of a Late-Nineteenth/Early-Twentieth-Century Rural Community.

Study Topics:

1) How do the artifact assemblages from the two late- nineteenth-century deposits at 16AN54 compare to each other in terms of quantity, quality, and variety? How do these compare with the early-twentieth-century remains from this site? Does the material culture at 16AN54 differ from those from contemporaneous rural communities elsewhere in North America?

Studies, both historical and archeological, pertaining the South have tended to focus their attention on the antebellum period (McBride and McBride 1987:143-46). Moreover, these studies seemingly concentrate on the socioeconomic aspects of cultural polar opposites: planters and slaves (Blassingame 1972; Orser 1984). These studies, if not focused on the plantation, tend to concentrate on large urban areas such as New Orleans, Mobile, and Charleston. Very little attention has been given to the numerous, small, communities that contain the vast majority of the population whether it be in southeast Louisiana, the greater South, or the United States. Some exceptions to these general trends include a socioeconomic study of Barton, a small, inland town on the Tombigbee River in Alabama (McBride and McBride

1987); a study of the original town site of Phoenix, Arizona (Henry and Garrow 1982); and a study of status indicators in a nineteenth-century industrial village in rural Pennsylvania (Heberling 1987).

As can be seen in the preceding, socioeconomic studies and material items indicating status are a primary focus of most historical archeological research. Two artifact classes, ceramics and faunal materials, are most often used to investigate status (see also Henry 1987; Landon 1996; Reitz 1987; Schultz and Gust 1983; Shepard 1987; Singer 1987; Spencer-Wood and Heberling 1987). At least one recent study has utilized glass bottles to provide chronological control additional to that afforded by ceramics. Moreover, this study also used bottles to investigate local, regional, and interregional trade networks (Baugher-Perlin 1987). NRHP test excavations at the Darrow site have yielded ceramic, faunal, and glass remains useful for the examination of socioeconomic issues of material culture.

The material culture assemblages from the Darrow site will be characterized within the context of site-specific questions that are also designed to facilitate comparison to other available data sets. These include:

a) are the late-nineteenth-century assemblages from Darrow more similar to each other in terms of the relative frequencies of artifact functional classes than they are to collections from contemporary rural community sites?

b) how do the ceramic collections from the late-nineteenth-century deposits compare to each other and to collections from other contemporary sites in terms of the quality, quantity, and variety of the pottery?

c) how does the late-nineteenth-century ceramic assemblage compare to those recovered from early-twentieth century deposits at 16AN54 in terms of quality, quantity, and variety?

d) are there differences in the twentieth-century ceramics recovered from domestic (residential) contexts at 16AN54?

e) what formal variation is seen in the ceramics from the various temporal components at the Darrow site as compared to those from contemporary rural community sites?

2) What was the extent and nature of the regional and interregional trade as reflected in the material assemblages recovered from the Darrow site?

Bottle glass becomes increasingly common in archeological contexts postdating the Civil War. Because it is frequently embossed with product information and/or place of manufacture, it is particularly useful for the investigation of issues concerning trade and market access. Ceramics may also be utilized for this purpose, but marked ceramics are generally less plentiful than embossed bottle glass.

Specific research questions addressing regional and interregional trade include:

a) do bottle glass and ceramics recovered from 16AN54 indicate a regional focus of economic interaction?

b) do certain classes of material culture indicate interregional economic interaction?

c) do the ceramic and glass assemblages indicate stable market access, or do the sources of material goods change over time?

Research Issue 1 addresses the themes of The Influence of the Mississippi River on Historic Settlement and Euro-American Influence on the Landscape identified in Louisiana's *Comprehensive Archeological Plan* (Smith et al. 1983:279).

Research Issue 2. Subsistence in a Late-Nineteenth/Early-Twentieth-Century Rural Community.

Study Topics:

1) What was the diet of the inhabitants of the Darrow site? How do the subsistence systems the late-nineteenth-century components compare to those from the early-twentieth century? What was the relative importance of wild and domestic resources for each of the components at 16AN54? What was the relative importance of professionally butchered meats?

A body of data exists for nineteenth-century diet in southeast Louisiana (Yakubik et al. 1995; Dukes 1993; Reitz 1982, 1992a, 1992b; Weinand and Reitz 1992, 1994; Reitz and Ruff 1983, 1984), but these efforts document subsistence strategies either on plantations or large urban areas such as New Orleans. Virtually nothing is known archeologically about foodways associated with small towns or villages dating to the late-nineteenth or early-twentieth centuries. Excavations at 16AN54 may provide baseline data to approach subsequent research related to dietary matters in small enclaves in southeast Louisiana.

Specific questions may be formulated to characterize the late-nineteenth- and early-twentieth-century dietary remains at 16AN54:

a) what animal species are represented in the late-nineteenth- and early-twentieth-century assemblages?

b) what ages are the individuals represented in the late-nineteenth- and early-twentieth-century faunal assemblages?

c) what cuts of meat are represented in the different assemblages?

d) what butchering techniques can be observed on the faunal material in the late-nineteenth and early-twentieth-century assemblages?

e) what evidence of food preparation (e.g. roasting) can be observed in the faunal material in the assemblages?

f) what floral evidence is preserved in late-nineteenth- and early-twentieth-century contexts?

g) do differences between the nineteenth-century faunal and floral assemblages indicate differences in socio-economic status?

h) do differences between early-twentieth-century faunal and floral assemblages indicate differences in socio-economic status?

Research Issue 2 addresses the themes of The Influence of the Mississippi River on Historic Settlement and Euro-American Influence on the Landscape identified in Louisiana's *Comprehensive Archaeological Plan* (Smith et al. 1983:95-97)

Research Issue 3. Site Structure at the Town of Darrow.

Study Topics:

1) What are the different use areas of 16AN54, and how do these change through time? Are features indicative of former structures preserved? If so, what do these tell us about the construction of the buildings? If not, what do they tell us about the destruction (razing) of these structures to build the 1932 levee? Does the distribution of artifacts reflect activity patterning?

Test excavations at the Darrow site revealed the presence of features associated with early-twentieth-century occupations in both commercial and residential contexts. The contexts, based on preliminary artifact analysis, are believed to date between 1900 and 1932. This temporal span would correlate to the latter portion of the period of significance (1865-1932) determined for the Darrow site. The razed brick chimney located in Trench 5 is definite evidence that at least portions of these structures were destroyed instead of being moved prior to levee construction. This evidence also provides a definitive *terminus post quem* denoting the final site formation process associated with the 16AN54.

Midden deposits associated with some these contexts seem to indicate that spatially discrete activity locales may be present at the site. While it is possible that research concerning activity patterning in a river community might be explored in the still-extant portions of the town, that portion of the site which will be impacted by construction represents activities over a more limited time period. Thus, we do not expect the "noise" from continued occupation post-1932. Then too, there is no evidence at present to suggest that pre-town, nineteenth-century remains are preserved on the land side of the levee. To the best of our present knowledge, the batture area of Darrow affords the only opportunity to explore activity patterning during the early part of the period of significance (ca. 1865-1878).

Because historical map sources depicting structures present during the early twentieth-century differ dramatically, it is unclear whether the store owned by D. Casso and the residence owned by Mrs. R.E. Lanoux were built in one or several constructions stages. Historical research and photographs of structures which are now part of the archeological record at the Darrow site do not seem to be able to resolve the question. Therefore, archeological excavations seem to be the only alternative which may possibly answer or address the question of how these structures were built.

If these structures were built entirely in one stage, the archeological deposits would provide an opportunity to investigate synchronic spatial and/or activity patterning within the site. If it was determined these structures were built in different stages, the information gathered during subsequent archeological investigations could potentially address diachronic spatial and/or activity patterning within the site. Thus, the Darrow site (16AN54) appears to provide an excellent opportunity for the investigating activity patterning in a small town, whether it is synchronic or diachronic in nature.

Specific questions which will characterize site structure include:

a) what architectural/structural features are extant, and where are they located?

b) what functional classes of artifacts are associated with architectural/structural features?

c) how are different categories of artifacts distributed across the site?

d) does the distribution of artifacts change in relation to the type of occupation (e.g. commercial, residential)?

Research Issue 3 address the themes of The Influence of the Mississippi River on Historic Settlement and Euro-American Influence on the Landscape identified in Louisiana's *Comprehensive Archaeological Plan* (Smith et al. 1983:95-97).

Study Priorities

Research Issue 1 and Research Issue 2 are of equal and highest priority. Questions related to late-nineteenth- and early-twentieth-century material culture and diet are important because relatively little archeological research in southeastern Louisiana has focused on this period. Research Issue 3 may be somewhat more difficult to address. Although it is known that structural remains dating to the twentieth century are present at 16AN54, the extent and condition of these remains is unknown.

Field Methods

1. Initially, the site datum and grid baselines will be re-established at the site. The locations of the data recovery excavations as well as all natural and cultural features uncovered during excavation will be plotted on the surface contour map prepared during NRHP test excavations (Research Issue 3).

2. A series of backhoe trenches will be excavated within the area to be impacted by construction. These excavations will be placed so as not to penetrate the projected 1:3 slope of the existing protection levee. The area below the projected slope will not be impacted during construction of the project. The placement of the trenches will also depend on the depth of the cultural deposits. That is, trenches placed to recover deposits at three feet depth will not be placed closer that 9 ft (2.74 m) to the toe of levee. The trenches should be minimally one backhoe bucket wide and 32.8 ft (10 m) in length.

Figures 45 and 46 illustrate the proposed locations of backhoe trenches. A trench should be excavated in the impact corridor somewhere between E60 and E90 in order to determine the east/west extent of the two midden deposits revealed in Trench 2 and Excavation Unit N193 E79. The relationship of the deposits in Trench 2 should be explored by a shorter trench placed between the two trenches (i.e., is the midden continuous or are there discrete deposits?). Another trench should be excavated in the area to be impacted between E200 and E220 to investigate the structure depicted on the 1909 Darrowville map. We believe this structure is a residence with presently unknown ownership. A trench should be placed between E240 and E270 to determine the horizontal extent of the store owned by D. Casso. Additionally, the west end of this trench should be in the north/south road fronting the store. Identification of this road would strengthen the interpretation that the structure found in Trench 3 is the store owned by D. Casso. A last trench should be placed in the area to be impacted between E330 and E350. This trench would provide additional structural data associated with Mrs. R.E. Lanoux's residence and potentially expose cultural deposits (midden) associated with the Lanoux residence in addition to the Ned Preston residence. Backhoe trench excavation will stop when either cultural material or the projected slope of the levee is encountered, whichever occurs first. The floor of the trench will be cleaned, photographed, and drawn. Representative profiles of the trench walls will be drawn and photographed (all Research Issues, but primarily 3).

3. No more than 14 (1.3% of the construction area) and no less than 10 1 m^2 (0.95% of the construction area) hand excavation units should be placed within the area to be impacted by construction. The excavation units will be placed judgmentally, based on information pro-

vided by previous excavations and the newly excavated backhoe trenches. The backhoe will be used to widen the trenches and remove overburden at the selected locations of these hand units.

The above units will provide samples of material, faunal, and botanical data to permit the investigation of Research Issues 1 and 2. The numbers of units at each locale are necessary to provide adequate samples for intra-locale comparison (Research Issue 3). Similarly, if features are found, these will permit Research Issue 3 to be addressed.

Although burials are not anticipated at the site, if one is encountered during excavation, that test unit will be discontinued immediately and the appropriate procedures will be instituted in accordance with the Louisiana Unmarked Human Burial Sites Preservation Act.

4. The 1 x 1 m excavation units will be excavated by natural strata to sterile subsoil, and each stratum will be divided into levels not exceeding 5 cm in thickness. Material from the units will be dry screened though 1/4 inch mesh (all Research Issues, but primarily 1 and 2).

5. A ten liter flotation sample of soil matrix will be collected from one 5 cm level within each culturally positive natural stratum in each of the 1 x 1 m units. These samples will be deflocculated and floated in the laboratory. Normally, all feature fill will be floated, but in the case of features greater than 30 liters in volume, only a 10-liter sample of soil will be floated. The flotation system will have the basic features of a SMAP machine (Watson 1976). A 0.5 mm geological sieve catches the light fraction, and the heavy fraction rests on 1.6 mm window screen that replaces the bottom of a metal washtub (Kidder and Fritz 1993). The flotation samples will provide materials for faunal and paleoethnobotanical analysis, as well as small-sized artifacts such as lead shot, beads, etc. (Research Issues 1 and 2).

6. Plan drawings will be made at the bottom of each level, and a plan drawing of the final floor will be prepared in each 1 x 1 m unit. A minimum of two profiles will be drawn and photographed in each excavation unit to demonstrate stratigraphy. All features encountered in the 1 x 1 m units will be planned and photographed (Research Issue 3). Feature fill will be excavated separately (all Research Issues).

Analytic Methods

1. The techniques of *terminus post quem*, mean ceramic dating, and bracketed dating will be utilized as applicable to date individual features and deposits (all Research Issues, but primarily 3).

2. Comparison of data recovered from nineteenth- and twentieth-century contexts will enable the examination of the material culture of the inhabitants of the Darrow site (Research Issue 1). A comprehensive ceramic classificatory system (Yakubik 1990) will be employed to facilitate examination of economic and site chronology issues (all Research Issues). Minimum numbers of vessels will be calculated for both ceramic and glass artifacts. Artifact functional groups will be analyzed utilizing a flexible formal typology (Yakubik and Franks 1992b, Franks and Yakubik 1991). This framework broadly classifies artifacts into two groups: those that reflect consumption and those that reflect production. The consumption group is broken into the sub-categories of Architecture, Furnishing, Clothing, Health/Hygiene, Adornment/Personal, Food Consumption, Beverage Consumption, Medicine Consumption, and Leisure Activities, each of which is in turn subdivided by material. Use of this typology will enable comparisons of the relative frequencies of different functional categories of artifacts (Research Issue 1).

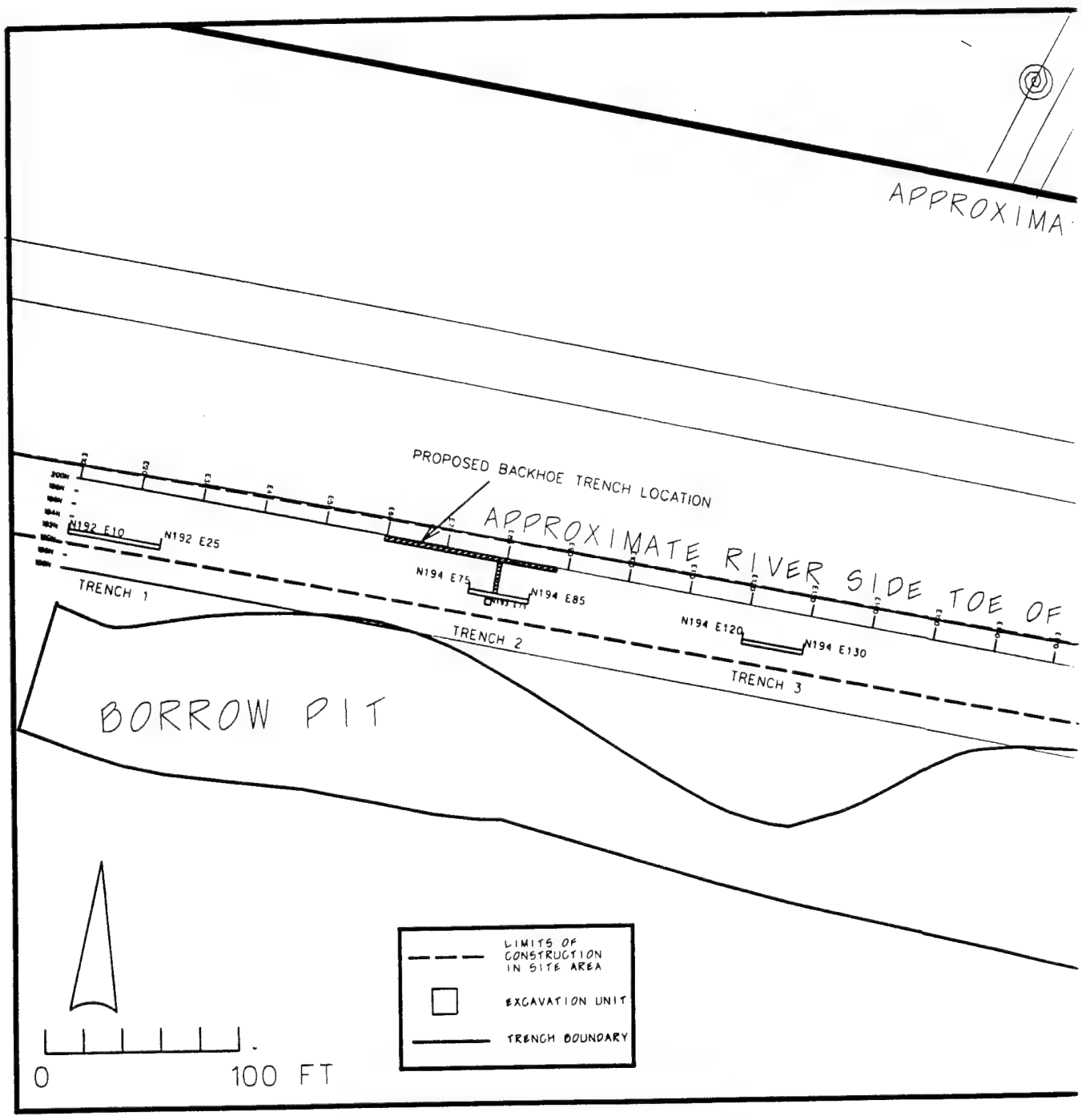
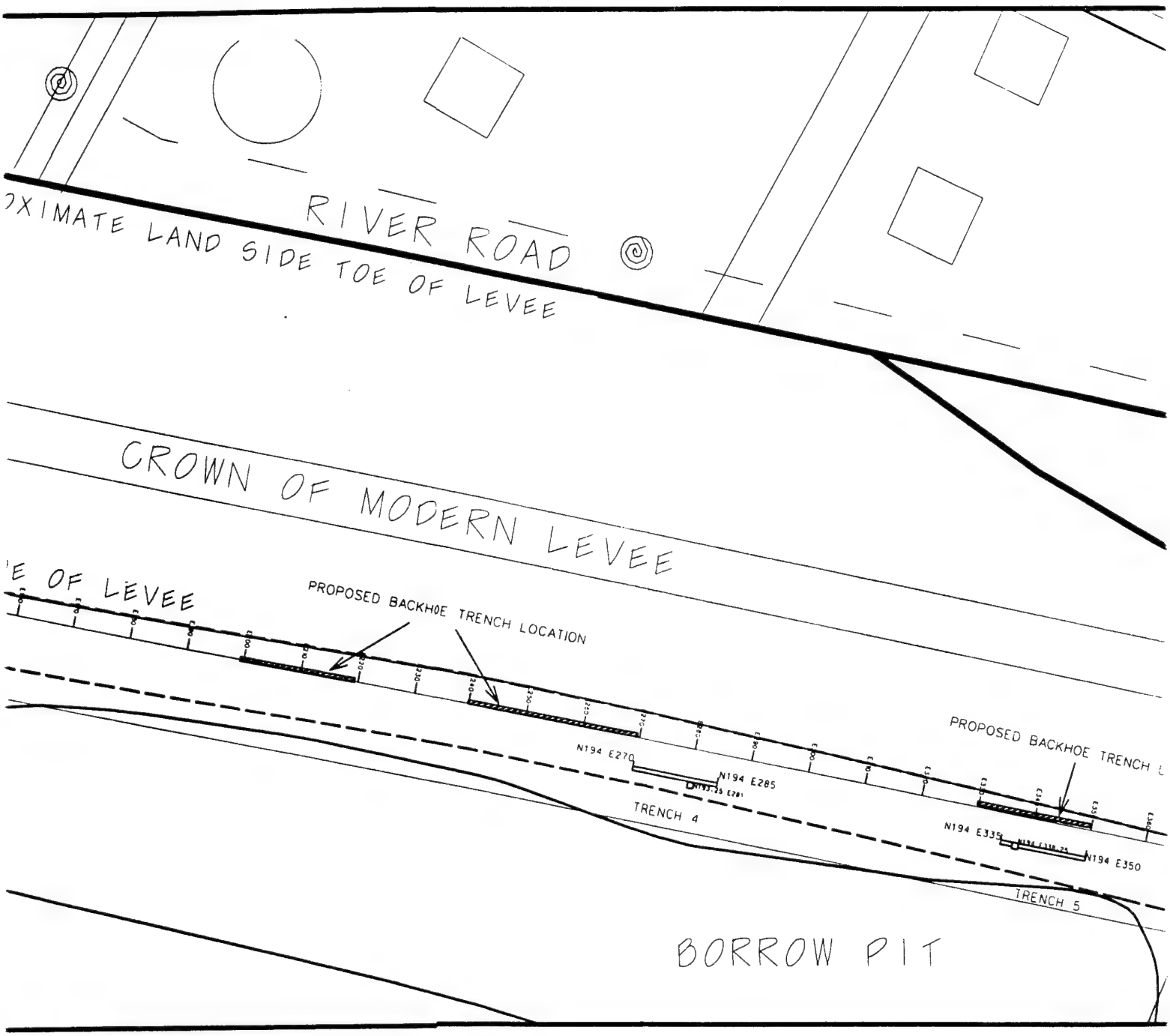


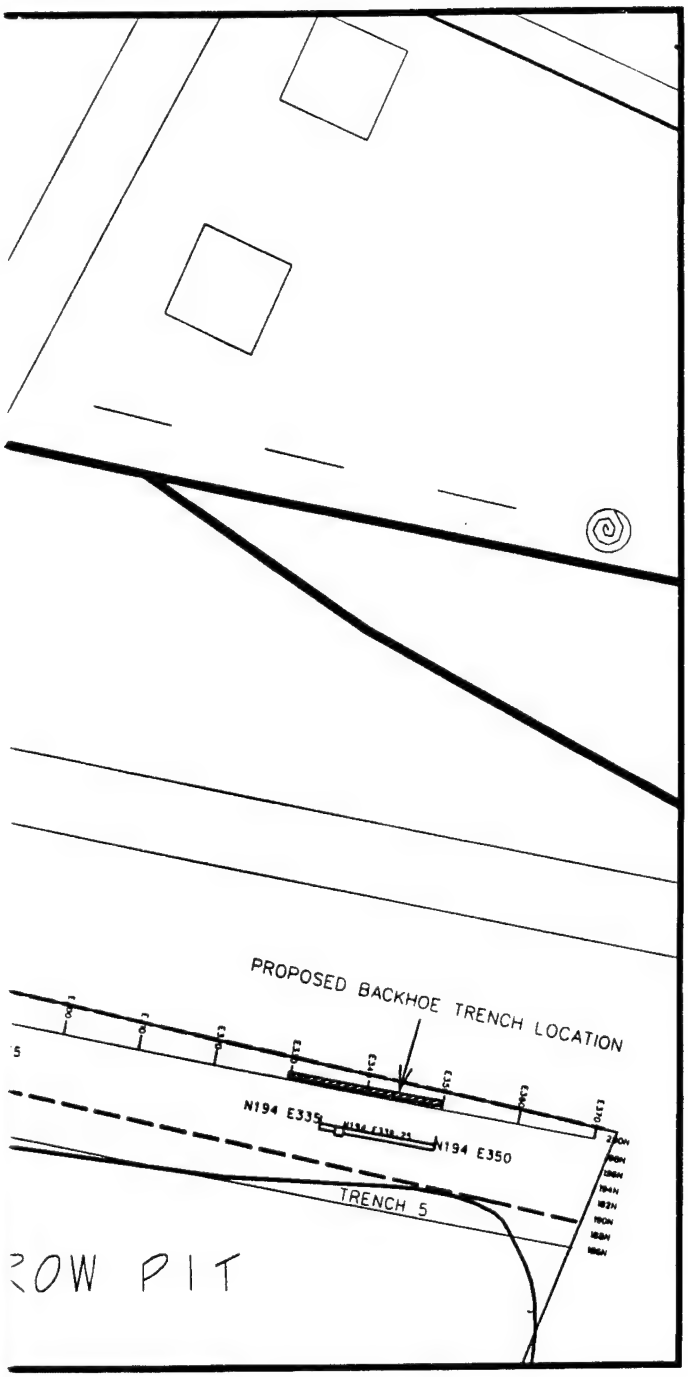
Figure 45. Recom

1



. Recommended locations of trenches for data recovery.

(2)


PROPOSED BACKHOE TRENCH LOCATION
N194 E335
N194 E350
TRENCH 5
ROW PIT

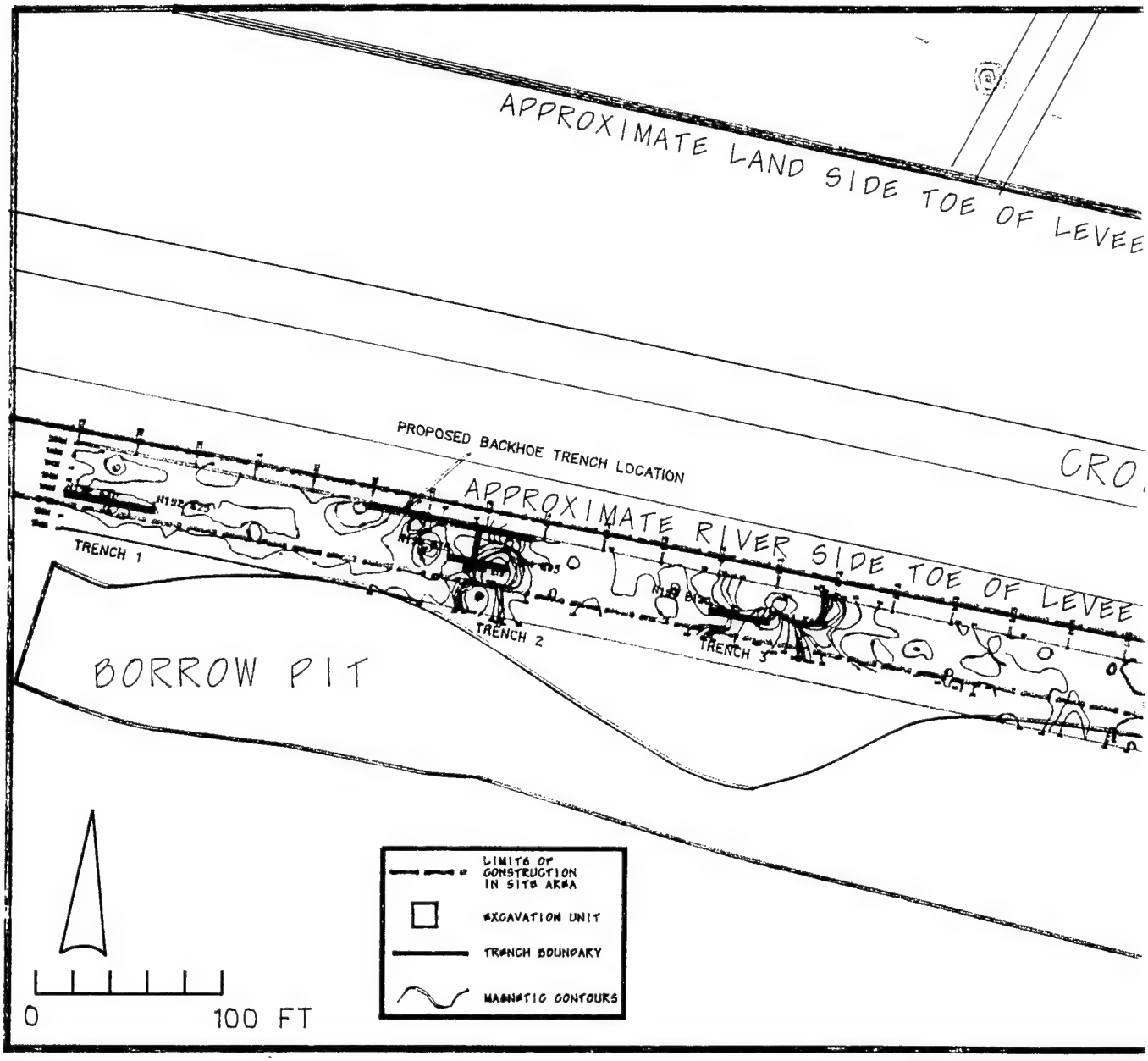
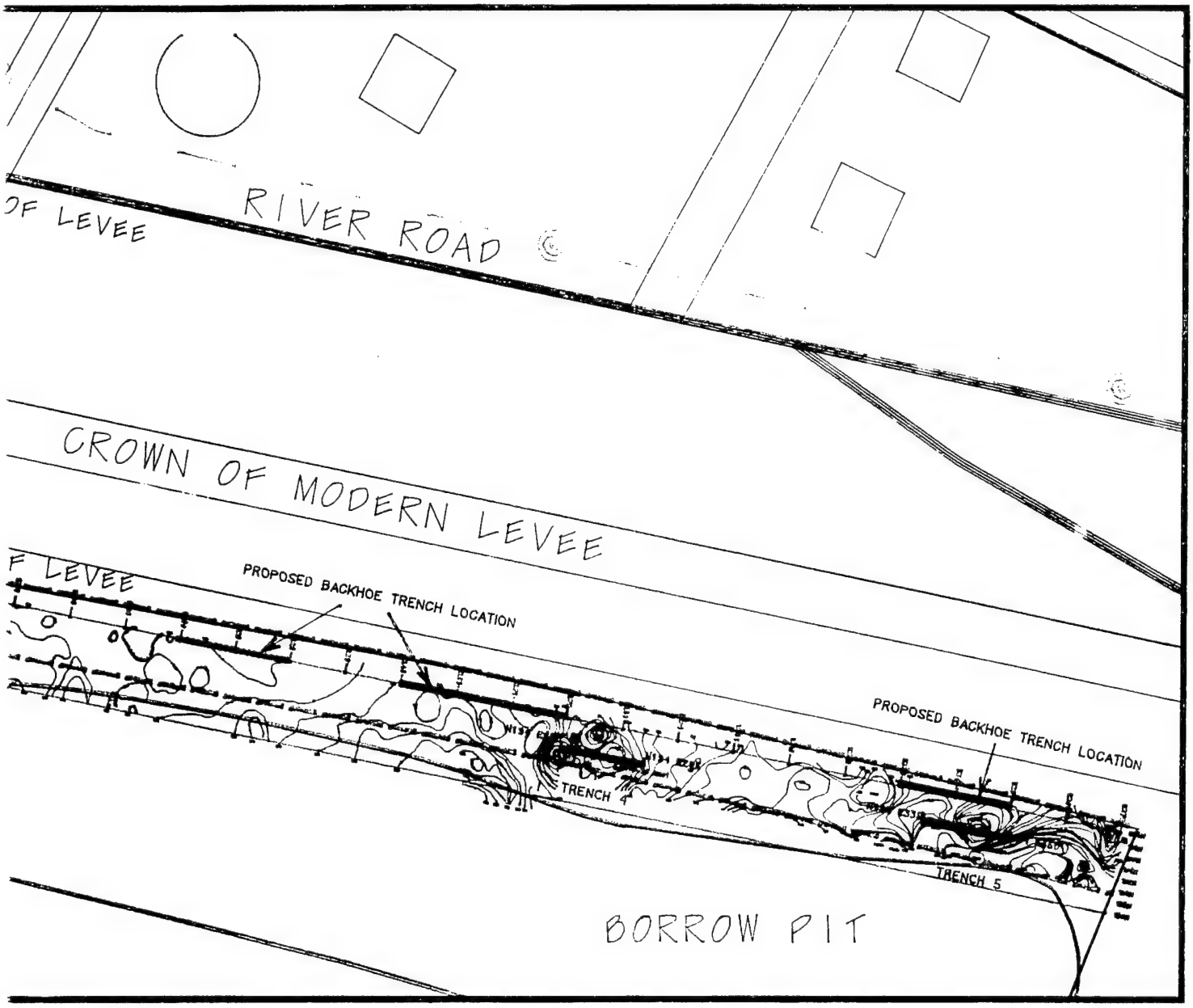


Figure 46. Recommended locations of trenches contours.



ns of trenches for data recovery relative to magnetic

(2)

3. Faunal material recovered from dry-screening and flotation will be analyzed. The heavy fraction from flotation will be sorted through nested 1/4", 1/8", and 1/16" mesh in the laboratory. Material from the 1/4" and 1/8" samples will be analyzed, and the 1/16" sample will be examined to determine if it can provide additional information. Identification of species, bone elements, and age, will be undertaken as applicable. Basic information will be quantified, including Number of Individual Specimens, Minimum Number of Individuals, and available biomass (Research Issue 2). Sampling procedures will be employed as necessary to avoid time-consuming collection of redundant data. Samples chosen for investigation will be determined by the analyst in consultation with the excavators.

4. Paleoethnobotanical remains will be examined to determine the types of plants present and their frequency. Calculations of relative dietary contribution measured as quantity of remains per unit of soil floated will be made (Research Issue 2). Sampling procedures will be employed as necessary to avoid time-consuming collection of redundant data. Samples chosen for investigation will be determined by the analyst in consultation with the excavators.

5. All artifacts, samples, field records, maps, plans, and photographs will be curated with the Louisiana Division of Archaeology. These materials and records will be cataloged utilizing the format currently employed by the State Archaeologist.

6. Although chain of title research was undertaken for NRHP testing, there are some gaps in the chain because the title of highly subdivided areas of the town frontage was not traced. Completion of the chain of title will close those gaps, and potentially provide socio-economic information on the inhabitants of the areas under investigation (all Research Issues, but primarily 1 and 2).

7. The research design will be assessed by the extent to which the proposed field and analytic methodologies facilitated addressing research objectives. The evaluation of the research design will provide information on how future research designs may be modified based on the relative success of the research conducted at the Darrow site. The evaluation of the research will be presented in the technical report of investigations.

8. A technical report will be produced in accordance with the standards and guidelines set forth by the *Secretary of the Interiors Standards and Guidlines for Archeology and Historic Preservation* (Federal Register 48(190) 1983:44716-44737). The report will minimally include a description of the study area; relevant historical documentation and background research; the research design; the field studies/investigations; all field observations; analyses and results illustrated with appropriate tables, charts, and graphs; an evaluation of the investigations in terms of the goals and objectives of the investigations; recommendations, and a bibliography.

This Page Intentionaly
Left Blank

REFERENCES CITED

Ancelet, Barry Jean, Jay D. Edwards, and Glen Pitre
1991 *Cajun Country*. University Press of Mississippi, Jackson.

Arthur, Stanley Clisby
1931 *Old Families of Louisiana*. Harmanson, New Orleans.

Arsenault, Bona
1988 *Histoire et Généalogie des Acadiens*. Volumes I -VI. Television de la Baie des Chaleurs, Inc.

Ascension Parish Magazine
1985 Bridging the Way to Progress. August 1985:30-31, 60-61.

Autin, Whitney J., S. F. Burns, B. J. Miller, Roger T. Saucier, and J. I. Snead
1991 Quaternary Geology of the Lower Mississippi Valley. In *The Geology of North America, Quaternary Nonglacial Geology*, vol. K-2, edited by R. B. Morrison, pp. 547-582. Geological Society of America, Boulder.

Babson, David W.
1989 *Pillars on the Levee: Archaeological Investigations at Ashland-Belle Helene Plantation, Geismar, Ascension Parish, Louisiana*. Midwestern Archaeological Research Center, Illinois State University, Normal.

Barber, Edwin Atlee
1902 *Pottery and Porcelain of the United States*. G.P. Putnam, New York.

Baugher-Perlin, Sherene
1982 Analyzing Glass Bottles for Chronology, Function, and Trade Networks. In *Archaeology of Urban American, The Search for Pattern and Process*, edited by Roy S. Dickens, Jr., pp. 259-290. Academic Press, New York.

Behrman, Eileen Larré
1986 *Ascension Parish, Louisiana, Civil Records 1770-1804*. Privately published.

Blassingame, John
1972 *The Slave Community*. Oxford University Press, New York.

Brown, Clair A.
1945 *Louisiana Trees and Shrubs*, Louisiana Forestry Commission, Bulletin No. 1. Claitor's Publishing Division, Baton Rouge.

Brown, Ian W.
1984 Late Prehistory in Coastal Louisiana. In *Perspectives on Gulf Coast Prehistory*, edited by D.D. Davis, pp. 94-124. University of Florida Press, Gainesville.

Bouchereau, Alcee, and Louis Bouchereau
1868-1917 *Statement of the Sugar and Rice Crops Made in Louisiana*. Pelican Steam Book and Job Printing, New Orleans.

Caldwell, Joseph R.
1964 Interaction Spheres in Prehistory. In *Hopewellian Studies*, edited by Joseph R Caldwell and Robert Hall, pp. 135-143. Scientific Papers 12, Illinois State Museum, Springfield.

Castille, George J.
1980 *Cultural Resources Reconnaissance Within the City of Donaldsonville, Louisiana*. Submitted by Coastal Environments, Inc. to the City of Donaldsonville, Louisiana. Report of file, Louisiana Division of Archaeology, Department of Culture, Recreation, and Tourism, Baton Rouge.

Castille, George J. and Charles E. Pearson
1982 *Addendum to Cultural Resources Reconnaissance of a Proposed Coal Transfer Facility at River Mile 174, Ascension Parish, Louisiana*. Submitted by Coastal Environments, Inc. to River Consulting, Inc., New Orleans. Report on file, Louisiana Division of Archaeology, Department of Culture, Recreation, and Tourism, Baton Rouge.

Castille, George, D.B. Kelley, S.K.E. Reeves, C.E. Pearson (contributions by G. Fredlund, J.P. Land, K. McCluskey, and J. Exnicios)
1982 *Archaeological Excavations at Esplanade Avenue and North Ramparts Street, New Orleans, Louisiana*. Submitted to the U.S. Postal Service, New Orleans.

Champomier, P.A.
1844-1862 *Statement of the Sugar Crop Made in Louisiana*. Cook, Young, & Co., New Orleans.

Coleman, James M.
1966 Ecological Changes in a Massive Fresh-Water Clay Sequence. *Transactions of the Gulf Coast Association of Geological Societies* 16:159-174.

Cotter, John L.
1968 *A Handbook of Historical Archaeology*. John L. Cotter, Wyncote, PA.

Davis, Ellis Arthur (ed.)
1940 *The Historical Encyclopedia of Louisiana*. Louisiana Historical Bureau, Baton Rouge.

Davis, George B., Leslie J. Perry, and Joseph W. Kirkley
1893 *The War of the Rebellion*. Series I, Volume XLI, Part I. Government Printing Office, Washington, D.C.

Deagan, Kathleen
1987 *Artifacts of the Spanish Colonies of Florida and the Caribbean, 1500-1800.* Smithsonian Institution Press, Washington, D.C.

Dickens, Roy S., Jr.
1982 *Archaeology of Urban America: The Search for Pattern and Process.* Academic Press, New York.

Ducote, George J.
1980 *Cultural Resources Survey of Bayou Lafourche Bridge and Approaches, Ascension Parish.* Submitted to the Louisiana Department of Transportation and Development, Baton Rouge.

Dukes, Joel
1993 Vertebrate Faunal Remains from Destrehan Plantation (16SC18), Louisiana. In *Archaeological Test Excavations at Destrehan Plantation*, by J.-K. Yakubik, pp. 109-119. Submitted to the Division of Archaeology, Baton Rouge.

Farrell, Kathleen M.
1989 *Stratigraphy and Sedimentology of Holocene Overbank Deposits of the Mississippi River, False River Region, Louisiana.* Unpublished doctoral dissertation, Department of Geology and Geophysics, Louisiana State University, Baton Rouge.

Fisk, Harold N.
1944 *Geological Investigation of the Alluvial Valley of the Lower Mississippi River.* Mississippi River Commission, U. S. Army corps of Engineers, Vicksburg, MS.

1947 *Fine Grained Alluvial Deposits and Their Effects on Mississippi River Activity.* Mississippi River Commission, Vicksburg, Mississippi.

Flores, Romero M., Frank G. Ethridge, Andrew D. Miall, William E. Galloway, and Thomas D. Fouch
1985 Recognition of Fluvial Systems and Their Resource Potential. SEPM Short Course No. 19. Society for Sedimentary Geology, Tulsa, Oklahoma.

Franks, Herschel A., and Jill-Karen Yakubik
1991 Research Design. In *A Research Design for Archeological Investigations and Architectural Evaluations Within the Proposed Upper Site, New Lock and Connecting Channels, Inner Harbor Navigation Canal, New Orleans, Louisiana*, by H. Franks, J. Mossa, J.-K. Yakubik, E. Weiss, J. Treffinger, and D. Gatzke, pp. 187-262. Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Fortier, Alcee
1914 *Louisiana.* Volume I. Century Historical Association, New Orleans.

Galloway, William E., and David K. Hobday
1983 *Terrigenous Clastic Depositional Systems.* Springer-Verlag, New York.

Garon, Henry A.
1976 *Donaldsonville, Its Businessmen, and Their Commerce at the Turn of the Century*. Privately published.

Garrison, Ervan G.
1996 Archaeological and Geochemical Studies at George Washington Carver National Monument, Diamond, Missouri. *Historical Archaeology* 30(2):22-40.

Giardino, Marco J.
1984 Documentary Evidence for the Location of Historic Indian Villages in the Mississippi Delta. In *Perspectives on Gulf Coast Prehistory*, edited by D. Davis, pp. 232-257. University Presses of Florida, Gainsville.

Goggin, John
1960 *The Spanish Olive Jar*. Yale University Publications in Anthropology No. 62, New Haven.

1968 *Spanish Majolica in the New World*. Yale University Publications in Anthropology No. 72. New Haven.

Goins, Charles R., and John M. Caldwell
1995 *Historical Atlas of Louisiana*. University of Oklahoma Press, Norman.

Goodwin, R. Christopher, Jill-Karen Yakubik, Debra Stayner, and Kenneth Jones
1985 *Cultural Resources Survey of Five Mississippi River Revetment Items*. Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Goodwin, R. Christopher, Jill-Karen Yakubik, Peter A. Gendel, and Herschel A. Franks
1986 *Cultural Resources Survey of the Burnside Revetment Item, Ascension and St. James Parishes, Louisiana*. Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Goodwin, R. Christopher, Stephen Hinks, Jennifer A. Cohen, Paul C. Armstrong, Sylvia I. Favert, Lawrence L. Hewitt, and William P. Athens
1989 *Significance Assessment of 16AN26, New River Bend Revetment, Ascension Parish, Louisiana*. Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Guccione, Margaret J., R. H. Lafferty, and L. Scott Commings
1988 Environmental Constraints of Human Settlement in an Evolving Holocene Alluvial System, the Lower Mississippi Valley. *Geoarchaeology* 3:65-84.

Guevin, Bryan L.
1990 *Archaeological Survey of the Geismar Liquid Carbonic Plant Extention, Ascension Parish, Louisiana*. Submitted to the Division of Archaeology, Baton Rouge.

Haskell, Helen W.
1981 *The Middleton Place Privy House: An Archaeological View of Nineteenth Century Plantation Life*. Popular Series 1, Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Heberling, Paul M.
1987 of Settlement Pattern in a Nineteenth-Century Industrial Village. In *Consumer Choice in Historical Archaeology*, edited by Suzanne M. Spencer-Wood, pp. 199-216. Plenum Press, New York.

Heinrich, Paul V.
1991a Chapter V. Geoarchaeology. In *Overview, Inventory, and Assessment of Cultural Resources in the Louisiana Coastal Zone*, edited by R.C. Goodwin et al., pp. 66-88. Submitted to Coastal Management Division, Department of Natural Resources, Baton Rouge, Louisiana.

1991b *A Sedimentological Explanation for the Distribution of Archaeological Sites in a Meander Belt as Stated by the "Relict Channel Rule."* Transactions of the Gulf Coast Association of Geological Societies 41:320.

Henry, Susan L.
1987 Factors Influencing Consumer Behavior in Turn-of-the-Century Phoenix. In *Consumer Choice in Historical Archaeology*, edited by Suzanne M. Spencer-Wood, pp. 359-382. Plenum Press, New York.

Henry, Susan L. and Patrick H. Garrow
1982 The Historic Component. In *City of Phoenix, Archaeology of the Original Townsite: Blocks 1 and 2*, edited by David E. Doyle, Part II. Submitted to the City of Phoenix, Central Phoenix Redevelopment Agency, Phoenix, Arizona.

Hinks, Stephen, Paul V. Heinrich, Susan B. Smith, Julie McClay, Jennifer Cohen, and William P. Athens
1994 *Cultural Resources Survey of Two Ascension Parish Revetments, Mississippi River M-179.1 to 173.0.* Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Jones, Olive
1971 Some Comments on the Newman Dating Key. *Society for Historical Archaeology Newsletter* 4(3):7-13.

Jones, Olive and Catherine Sullivan
1989 *The Parks Canada Glass Glossary for the Description of Containers, Tableware, Closures, and Flat Glass.* National Historic Parks and Sites Canadian Parks Service, Quebec, Canada.

Kelley, David B.
1989 *Archeological and Historical Investigations of Four Proposed Revetment Areas Located Along the Mississippi River in Southeast Louisiana.* Submitted by Coastal Environments, Inc. to the U.S. Army Corps of Engineers, New Orleans District.

Kidder, Tristram R., and Gayle J. Fritz
1993 Subsistence and Social Change in the Lower Mississippi Valley: Excavations at the Reno Brake and Osceola Sites, Louisiana. *Journal of Field Archeology* 20:281-297.

Kniffen, Fred B., Hiram F. Gregory, and George A. Stokes
1987 *The Historic Indian Tribes of Louisiana: From 1542 to the Present*. Louisiana State University Press, Baton Rouge.

Krinitzsky, E. L., and F. L. Smith
1969 *Geology of Backswamp Deposits in the Atchafalaya Basin, Louisiana*. Waterways Experiment Station, Vicksburg District, U.S. Army Corps of Engineers, Vicksburg.

Landon, David B.
1996 Feeding Colonial Boston: A Zooarchaeological Study. *Historical Archaeology* 30(1):1-153.

Lofstrom, Edward, Jeffrey P. Tordoff, and Douglas C. George
1982 A Seriation of Historic Earthenwares in the Midwest, 1780-1870. *The Minnesota Archaeologist* 41:3-29.

Lorraine, Dessamae
1968 An Archaeologist's Guide to 19th Century American Glass. *Historical Archaeology* 2:35-44.

Lowery, George H., Jr.
1974a *The Mammals of Louisiana and its Adjacent Waters*. Louisiana State University Press, Baton Rouge.

1974b *Louisiana Birds*. Kingsport Press, Tennessee.

Majewski, Teresita and Michael J. O'Brien
1987 The Use and Misuse of Nineteenth-Century English and American Ceramics in Archaeological Analysis. *Advances in Archaeological Method and Theory* 11:97-209.

Marchand, Sidney A.
1931 *The Story of Ascension Parish*. Privately Published.

1949 *Across the Years in Ascension Parish*. Privately Published.

1952 *The House of Marchand*. Privately published.

1959 *The Chief in the Land of the Chetimachas*. Privately published.

1965 *An Attempt to Re-assemble the Old Settlers in Family Groups*. Claitor's Publishing Division, Baton Rouge.

Markell, Ann, R. Christopher Goodwin, Susan Barrett Smith, and Ralph Draughon
1996 *Patterns of Change in Pointe Coupee Parish, Louisiana: The Americanization of Nina Plantation 1820-1890*. Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Maygarden, Benjamin D., Catheren H. Jones, and Jill-Karen Yakubik
1994a *Land-Use History for Items M-225.5 to 207-R and M-178.0 to 173.2-R, Mississippi River Levees, Louisiana.* Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Maygarden, Benjamin, Jill-Karen Yakubik, Hershel A. Franks, Maria Tavaszi, Duncan Spencer, Colin Brooker, Donna Stone, Catheren Jones, Rosalinda Méndez, and Tara Bond
1994b *Archaeological Data Recovery at Ashland-Belle Helene Plantation (16AN26), Ascension Parish, Louisiana, Volume III: Investigations at the Sugar House.* Submitted to the Division of Archaeology, Baton Rouge.

McBride, W. Stephen and Kim A. McBride
1987 Socioeconomic Variation in a Late Antebellum Southern Town: The View from Archaeological and Documentary Sources. In *Consumer Choice in Historical Archaeology*, edited by Suzanne M. Spencer-Wood, pp. 143-162. Plenum Press, New York.

McCloskey, Kathleen
1979 Use of Mean Ceramic Date Formula in a Nineteenth Century Assemblage. Manuscript on file, Earth Search, Inc., New Orleans.

McCloskey, Kathleen G., Charles E. Pearson, and George J. Castille
1981 *Cultural Resources Reconnaissance of a Proposed Coal Transfer Facility at River Mile 174, Ascension Parish, Louisiana.* Submitted by Coastal Environments, Inc. to Miller Coal Systems, Inc. Report on file, Louisiana Division of Archaeology, Department of Culture, Recreation, and Tourism, Baton Rouge.

Miller, George L.
1980 Classification and Economic Scaling of Nineteenth Century Ceramics. *Historical Archaeology* 14:1-40.

1991 A Revised Set of CC Index Values for Classification and Economic Scaling of English Ceramics from 1787 to 1880. *Historical Archaeology* 25(1):1-25.

Miller, J. Jefferson and Lyle M. Stone
1970 *Eighteenth Century Ceramics from Fort Michilimackinac: A Study in Historical Archaeology.* Smithsonian Institution Press, Washington, D.C.

Munsey, Cecil
1970 *The Illustrated Guide to Collecting Bottles.* Hawthorne Books, New York.

Nelson, Lee H.
1963 Nail Chronology as an Aid to Dating Old Buildings. *History News* 19(2).

Neuman, Robert W.
1977 *An Archaeological Survey of Ascension Sewerage Districts, Numbers 2,3, and 4.* Submitted to the Louisiana Division of Archaeology, Baton Rouge.

1984 *An Introduction to Louisiana Archaeology.* Louisiana State University Press, Baton Rouge.

Noel-Hume, Ivor
1969 Pearlware, the Forgotten Milestone of English Ceramic History. *Antiques* 95:390-397, 922-923.

1970 *A Guide to the Artifacts of Colonial America*. Alfred A. Knopf, New York.

1972 The What, Who and When of English Creamware Plate Design. *Antiques* 101:350-355.

Orser, Charles E., Jr.
1984 The Past Ten Years of Plantation Archaeology in the Southeastern United States. *Southeastern Archaeology* 3:1-12.

Peterson, Roger Tory
1990 *A Field Guide to Western Birds*. Houghton Mifflin Company, Boston.

Phillips, Philip
1970 *Archaeological Survey in the Lower Yazoo Basin, Mississippi, 1949-1955*. Peabody Museum of Archaeology and Ethnology Papers 60, Harvard University, Cambridge.

Quimby, George I.
1957 The Bayou Goula Site, Iberville Parish, Louisiana. *Fieldiana: Anthropology* 47:91-170.

Rader, Burt F.
1978 *Cultural Resources Survey of Aben Revetments Ascension Parish, LA*. Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Ramsey, John
1947 *American Potters and Pottery*. Tudor Publishing Co., New York.

Ray, Marcia
1974 *Collectible Ceramics*. Crown Publishers, Inc. New York.

Reitz, Elizabeth J.
1982 Cultural Ecology: Vertebrae Fauna. In *Historic Archaeology: Data Recovery at the New Orleans General Hospital Site* (16OR69), by R. Christopher Goodwin and Jill-Karen Yakubik, pp. 162-179. Submitted to the Louisiana Division of Archaeology, Baton Rouge.

1992a Vertebrate Fauna from Holy Cross. In *Archeological Survey and Testing in the Holy Cross Historic District, New Orleans, Louisiana*, by Jill-Karen Yakubik and Herschel A. Franks. Submitted to New Orleans District, Corps of Engineers, New Orleans.

1992b Vertebrate Fauna from the Cabildo. In *Archaeological Investigations at the Cabildo*, by Jill-Karen Yakubik and Herschel A. Franks. Submitted to the Louisiana Division of Archaeology, Baton Rouge.

Reitz, Elizabeth J. and Barbara Ruff
1983 The Cultural Ecology of Elmwood: Vertebrate Faunal Remains. In *The Historic Archaeology of Elmwood Plantation*, by R. Christopher Goodwin, Jill-Karen Yakubik, and Cyd H. Goodwin, pp. 201-224. Submitted to the Louisiana Division of Archaeology, Baton Rouge.

1984 Vertebrate Fauna from Algiers Point. In *Archeological Data Recovery at Algiers Point*, by R. Christopher Goodwin, Jill-Karen Yakubik, and Peter Gendel, pp. 207-260. Submitted to the New Orleans District, Army Corps of Engineers, New Orleans.

Rhodes, Daniel
1973 *Clay and Glazes for the Potter*. Revised edition. Chilton Book Company, Radnor.

Rose, Jerome C. and Lawrence Gene Santeford
1987 Burial Descriptions. In *Gone to a Better Land*, edited by Jerome C. Rose, pp. 38-129. Arkansas Archaeological Survey, Fayetteville.

Saucier, Roger T.
1969 *Geological Investigation of the Mississippi River Area Artonish to Donaldsonville, Louisiana*. Waterways Experiment Station, Vicksburg District, U.S. Army Corps of Engineers, Vicksburg.

1974 *Quaternary Geology of the Lower Mississippi Valley*. Research Series No. 6, Arkansas Archaeological Survey, Fayetteville.

1981 Current Thinking on Riverine Processes and Geological History as Related to Human Settlement in the Southeast. *Geoscience and Man* 22:7-18.

1994 *Geomorphology and Quaternary Geologic History of the Lower Mississippi Valley*. Waterways Experiment Station, Vicksburg District, U.S. Army Corps of Engineers, Vicksburg.

Saucier, Roger T., and Lawson M. Smith
1986 Late Wisconsinan and Holocene Evolution of the Lower Mississippi Valley. *Geological Society of America Abstracts with Program* 18:739.

Saucier, Roger T., and John I. Snead
1989 Quaternary Geology of the Lower Mississippi River Valley. In *The Geology of North America, Quaternary Nonglacial Geology, Conterminous U. S.*, edited by R. B. Morrison, Plate 10, vol. K-2, Geological Society of America, Boulder.

Schultz, Peter D. and Sherri M. Gust
1983 Faunal Remains and Social Status in 19th Century Sacramento. *Historical Archaeology* 17(1):44-54.

Schumm, Stanley A., and G. R. Brakenridge
1987 Chapter 10 River Responses. *In North America and Adjacent Oceans During the Last Deglaciation*, edited by W. F. Ruddiman and H. E. Wright , pp. 221-240, The Geology of North America, vol. K-3, Geological Society of America, Boulder, Colorado.

Scott, Robert N. (ed.)
1889a *The War of the Rebellion*. Series I, Volume XXVI, Part I. Government Printing Office, Washington, D.C.

1889b *The War of the Rebellion*. Series I, Volume XXVI, Part II. Government Printing Office, Washington, D.C.

Shenkel, J. Richard
1976 *Cultural Resources Survey of the Proposed Smoke Bend Revetment Ascension Parish, Louisiana*. Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

1984 Early Woodland in Coastal Louisiana. In *Perspectives on Gulf Coast Prehistory*, edited by D.D. Davis, pp.41-71. Ripley P. Bullen Monographs in Anthropology and History, University of Florida Press, Gainesville.

Shepard, Steven J.
1987 Status Variation in Antebellum Alexandria: An Archaeological Study of Ceramic Tableware. In *Consumer Choice in Historical Archaeology*, edited by Suzanne M. Spencer-Wood, pp. 163-198. Plenum Press, New York.

Shuman, Malcolm K., and Dennis C. Jones
1985 *Cultural Resources Survey of Proposed Pipeline Right-of-Way in Parts of Iberville, Ascension, and Assumption Parishes, LA*. Submitted to the Division of Archeology, Baton Rouge.

Singer, David A.
1987 Threshold of Affordability: Assessing Fish Remains for Socioeconomics. In *Consumer Choice in Historical Archaeology*, edited by Suzanne M. Spencer-Wood, pp. 85-100. Plenum Press, New York.

Smith, Steven D., Philip G. Rivet, Kathleen M. Byrd, and Nancy W. Hawkins
1983 *Louisiana's Comprehensive Archaeological Plan*. Division of Archaeology, Baton Rouge.

South, Stanley
1972 Evolution and Horizon as Revealed in Ceramic Analysis in Historical Archaeology. *Conference on Historic Site Archaeology Papers* 6:71-116.

1977 *Method and Theory in Historical Archeology*. Academic Press, New York.

Spencer-Wood, Suzanne M. (editor)
1987 *Consumer Choice in Historical Archaeology*. Plenum Press, New York.

Spencer-Wood, Suzanne M. and Scott D. Heberling
1987 Consumer Choices in White Ceramics: A Comparison of Eleven Early Nineteenth-Century Sites. In *Consumer Choice in Historical Archaeology*, edited by Suzanne M. Spencer-Wood, pp. 55-84. Plenum Press, New York.

Spicer, Bradley E., Ray E. Dance, and Terry G. Hargroder
1976 *Soil Survey of Ascension Parish, Louisiana*. Soil Conservation Service, U.S. Department of Agriculture, Alexandria, Louisiana.

Sprunt, Alexander IV and Herbert S. Zim
1961 *Gamebirds: A Guide to North American Species and Their Habits*. Golden Press, New York.

Stopp, G. Harry Jr.
1975 *Archaeological Survey Report (proposed Donaldsonville Plant Expansion Site, Ascension Parish, Louisiana)*. Submitted to the Division of Archeology, Baton Rouge.

Sussman, Lynn
1977 Changes in Pearlware Dinnerware 1780-1830. *Historical Archaeology* 11:105-111.

Toulouse, Julian Harrison
1969 *Fruit Jars*. Thomas Nelson & Sons, Camden, NJ

1971 *Bottle Makers and Their Marks*. Thomas Nelson, Inc., New York.

Van Rennselaer, Susan
1966 Banded Creamware. *Antiques* 90:337-341.

Vigander, Hakon, Benjamin Maygarden, and Jill-Karen Yakubik
1994 *Cultural Resources Investigations for Item M-178.0 to 173.2-R, Mississippi River Levees, Louisiana.* Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Voorhies, Jacqueline K.
1983 The Acadians: The Search for the Promised Land. In *The Cajuns: Essays on Their History and Culture*, edited by Glenn R. Conrad, pp. 79-94. Center for Louisiana Studies, University of Southwestern Louisiana, Lafayette.

Watson, Patty Jo
1976 In Pursuit of Prehistoric Subsistence: A Comparative Account of Some Contemporary Flotation Techniques. *Midcontinental Journal of Archeology* 1:77-100.

Weinand, Daniel C. and Elizabeth J. Reitz
1992 Vertebrate Fauna from a Quarters Locale at Beka Plantation. In *Archaeological Investigations Within the Freeport-MacMoRan Audubon Species Survival and Research Center and Wilderness Park, Orleans Parish, Louisiana, Including Beka Plantation (16OR90)*, by Jill-Karen Yakubik and Herschel A. Franks, pp. 165-183. Submitted to the Louisiana Division of Archaeology, Baton Rouge.

1994 Vertebrate Fauna from Ashland Plantation. In *Archaeological Data Recovery at Ashland-Belle Helene Plantation (16AN26), Ascension Parish, Louisiana*, By J.-K. Yakubik, C. Leven, K. Jones, B. Maygarden, S. Dawdy, D. Stone, J. Cusick, C. Jones, R. Mendez, H. Franks, and T. Bond, Vol. I, pp. 11-1 -11-40. Submitted to the Division of Archaeology, Baton Rouge.

Wilson, Rex L.
1981 *Bottles on the American Frontier*. University of Arizona Press, Tucson.

Wiseman, Diane E., Richard A. Weinstein, and Kathleen G. McCloskey
1979 *Cultural Resources Survey of the Mississippi River-Gulf Outlet, Orleans and St. Bernard Parishes, Louisiana.* Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Works Progress Administration of Louisiana (WPA)
1940 *Louisiana: A Guide to the State.* Hastings House, New York.

Worthy, Linda H.
1982 Classification and Interpretation of Late Nineteenth- and Early-Twentieth-Century Ceramics. In *Archaeology of Urban America: The Search for Pattern and Process*, edited by Roy S. Dickens, Jr., pp. 329-360. Academic Press, New York.

Wynter, Harriet
1972 *An Introduction to European Porcelains.* Thomas Y. Crowell Company, New York.

Yakubik, Jill-Karen
1990 *Ceramic Use in Late-Eighteenth-Century and Early-Nineteenth-Century Southeastern Louisiana.* Unpublished doctoral dissertation, Department of Anthropology, Tulane University, New Orleans.

1991 Management Summary: Archaeological Investigations at 726-728 Toulouse Street. Submitted to the Historic New Orleans Collection, New Orleans.

1992 *Archaeological Investigations at the Site of the Cabildo, New Orleans*, Louisiana. Submitted to the Division of Archaeology, Baton Rouge.

Yakubik, Jill-Karen, and Herschel A. Franks
1992 *Archeological Survey and Testing in the Holy Cross Historic District, New Orleans, Louisiana.* Submitted to the New Orleans District, U.S. Army Corps of Engineers, New Orleans.

Yakubik, Jill-Karen, C. Leven, K. Jones, B. Maygarden, S. Dawdy, D. Stone, J. Cusick, C. Jones, R. Mendez, H. Franks, and T. Bond
1994 *Archaeological Data Recovery at Ashland-Belle Helene Plantation (16AN26), Ascension Parish, Louisiana.* Submitted to the Division of Archaeology, Baton Rouge.

MAPS

Louisiana State Surveyor's Office
1844 *U.S. Township Plats, Ascension Parish, Louisiana.* Clerk of Court's Office, Ascension Parish Court House, Donaldsonville, Louisiana.

Louisiana State Surveyor's Office
1851 *U.S. Township Plats, Ascension Parish, Louisiana.* Clerk of Court's Office, Ascension Parish Court House, Donaldsonville, Louisiana.

Louisiana State Surveyor's Office
1873 *U.S. Township Plats, Ascension Parish, Louisiana.* Clerk of Court's Office, Ascension Parish Court House, Donaldsonville, Louisiana.

Melish, John
1820 *Map of Louisiana*. Copy on file, Louisiana Collection, Howard-Tilton Memorial Library, Tulane University, New Orleans.

Mississippi River Commission
1879-1880 *Survey of the Mississippi River, Chart No. 69*. Copy on file, New Orleans District, U.S. Army Corps of Engineers.

Mississippi River Commission
1921 *Survey of the Mississippi River, Chart No. 69*. Copy on file, New Orleans District, U.S. Army Corps of Engineers.

Norman, B.
1858 *Plantations on the Mississippi River Between Natchez and New Orleans*. Copy on file, Earth Search Inc., New Orleans.

Pontchartrain Levee District
1879-1880 *Darrowville Levee, Parish of Ascension, Mississippi River Left Bank*. General Files, Louisiana Department of Transportation and Development, Baton Rouge.

Pontchartrain Levee District
1884 *Plan of Darrowville, Opposite Donaldsonville, Louisiana*. Clerk of Court's Office, Ascension Parish Court House, Donaldsonville, Louisiana.

Pontchartrain Levee District
1909 *Darrowville New Levee, Ascension Parish, Louisiana*. General Files, Louisiana Department of Transportation and Development, Baton Rouge.

Pontchartrain Levee District
1932a *Chart No. 46, Pontchartrain Levee District*. General Files, Louisiana Department of Transportation and Development, Baton Rouge.

Pontchartrain Levee District
1932b *U.S. Darrowville New Levee, Ascension Parish*. General Files, Louisiana Department of Transportation and Development, Baton Rouge.

United States Army Corps of Engineers
1950 *Caving Bank Survey, Vicinity of Darrow, Louisiana*. Revised 1964. Office of the District Engineer, USACOE.

United States Army Corps of Engineers
1991-1992 *Mississippi River Hydrographic Survey, Sheet No 36*. New Orleans District, U.S Army Corps of Engineers.

ARCHIVAL SOURCES

Ascension Parish Clerk of Court's Office, Donaldsonville
Conveyance Office Books
Miscellaneous Acts Books

Ascension Parish Clerk of Court's Office, Donaldsonville, continued.
U.S. Township Plat Books
Miscellaneous Plat and Map Collection

Ascension Parish Public Library, Donaldsonville
Vertical Files

Howard-Tilton Memorial Library, Tulane University
Microfilm Collections
U.S. Census Returns for Louisiana, 1810-1870

APPENDIX I

SCOPE OF WORK

CELMN-PD-RN

July 18, 1996

SCOPE OF SERVICES
CONTRACT DACW29-94-D-0020
DELIVERY ORDER 14

SIGNIFICANCE ASSESSMENT OF DARROW (16AN54), MARCHAND TO DARROW LEVEE ENLARGEMENT AND CONCRETE SLOPE PAVEMENT, MISSISSIPPI RIVER LEVEES, ASCENSION PARISH, LOUISIANA

1. Introduction

This delivery order calls for the identification of research issues and objectives along with archeological testing of Darrow, site 16AN54. Cultural resources investigations are required to assess site significance and determine the potential for impacts from construction of the Marchand to Darrow Levee Enlargement and Concrete Slope Pavement, Item M-181.1 to 175.4-L, Mississippi River Levees, Ascension Parish, Louisiana (Attachment 1 File No. H-8-44735).

The Contractor is to conduct background historical and archeological records research, prepare a research design and conduct site testing, and submit comprehensive draft and final reports of the investigations. An important objective of the effort is to identify alternatives and implement procedures for assessing and if necessary, mitigate any impacts to archeological deposits without penetrating the theoretical slope or footprint of the existing protection levee. The contract period for this delivery order is 32 weeks.

2. Study Area

Site 16AN54 is located in Township 11 South, Range 2 East, Section 5. The site is situated on the batture between the mainline Mississippi River Levee and an adjacent borrow pit. The site extends from levee station 2699+02.25 to 2712+00 as shown on Plates 4 and 5 of the project maps (Attachment 1).

3. Background Information

The Marchand to Darrow Levee Enlargement and Concrete Slope Pavement (CSP) project will consist of placing earth fill and surfacing the levee crown to bring the levee crown up to design grade, and placing concrete slope pavement on the existing riverside levee slope. The project extends from station 2487+00 to 2730+00 and includes a borrow area located from stations 2553+00 to 2561+00. Preparation for CSP will include excavation

of a 15 to 18 feet wide by 3 feet deep trench at the toe of the existing levee. The width of the excavation trench will vary depending on the slope of the existing levee. Material from the excavation trench will be stockpiled adjacent to the riverside edge of the excavation trench. When CSP is complete the excavation trench will be backfilled.

Efforts to identify and inventory cultural resources within the project area were completed under two separate Mississippi River revetment items. Coastal Environments, Incorporated completed a survey of the upriver portions of the project area as part of the Marchand Revetment project (Kelly 1989). In 1994, R. Christopher Goodwin & Associates, Incorporated reported the results of a survey of the St. Elmo Revetment project which includes the downriver portion of the project area.

Site 16AN54 was identified as a potentially significant archeological site dating from the early twentieth century (Hinks et al. 1994) (Attachment 2). Darrow (16AN54) is reported to extend from the Cooper T. Smith yard (Sta. 2712+00) upriver 350 meters (Sta. 2699+02.25). Efforts to delineate the site included shovel testing, augering, and the excavation of two 1 X 1 m test units. Auger profile records from previous investigations provide an indication of the depth and dimension of the deposits (Attachment 3). A copy of the completed Louisiana State site form is provided as Attachment 4.

A survey of standing structures for Ascension Parish was completed during the early to mid 1980s. Approximately 25 structures were identified and recorded within the modern limits of Darrow. The records may represent an important resource for comparing data.

4. Study Requirements

The study will be conducted utilizing current professional standards and guidelines including, but not limited to:

•the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37);

•the National Park Service's National Register Bulletin 15 entitled, "How to Apply the National Register Criteria for Evaluation";

•the National Park Service's National Register Bulletin 36 entitled, "Guidelines for Evaluating and Registering Historical Archeological Sites and Districts";

•the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation as published in the Federal Register on September 29, 1983;

•Louisiana's Comprehensive Archaeological Plan, dated October 1, 1983;

•The Advisory Council on Historic Preservation's regulation 36 CFR Part 800 entitled, "Protection of Historic Properties".

The work to be performed by the Contractor will be divided into three phases. Phase 1 will consist of historical and archeological background research and preparation of a research design and excavation plan, Phase 2 will include site testing at 16AN54 and Phase 3 will consist of data analyses and report preparation.

a. Phase 1: Historical/ Archeological Background Research and Research Design. The Contractor shall commence, upon delivery order award, with a literature, map, and records review specific to the site and its surrounding area. This phase will include, but not be limited to review of historic maps, the State Archeologist's site and standing structure files, the National Register of Historic Places, archeological reports, historic archives, census records, and other public or courthouse records.

Informant interviews with long-time residents of Darrow, Louisiana will be conducted during Phase 1. The objective of the interviews will be to further elucidate the historic context of the area and distinguish site conditions prior to construction of the U.S. Darrowville 1932 levee setback.

During Phase 1 the Contractor will prepare a research design and excavation plan to establish a historic context for assessing the significance of 16AN54 and develop research objectives to be carried out during the subsequent phases of the investigation. The research design and excavation plan will take into full consideration all previous investigations, along with excavation restrictions due to concerns for levee stability, when proposing solutions for evaluating the full range of potential project impacts to archeological deposits. Excavation restrictions are described in detail in Section 4.b. below.

The research design shall outline the historic setting of the study area and identify and define important data gaps and problems in the knowledge of the region's history. The research

design will include a statement of the general and specific theoretical goals in the form of hypotheses. Further, the research design (including the excavation plan) will specify the data and techniques which will allow empirical testing of the hypotheses. Thus, the research design and excavation plan will integrate research objectives with specific data collection and analyses techniques, and will serve as the guide for evaluation of site significance. The research design (including a detailed excavation plan) will be submitted to the COR for review and approval within three weeks after date of award. The excavation plan will take into account certain restrictions which will apply to all excavations. These restrictions are described in Section 4.b. below.

Oral histories, economic and social trends, geomorphological data, major natural events, and all previous construction affecting land use patterns and the state of preservation at 16AN54 will be analyzed and presented in the draft and final reports (See Section 5. below).

b. Phase 2: Site Testing. Site testing shall commence at 16AN54 immediately upon approval of the research design and excavation plan. Stages of the Mississippi River are not expected to pose a problem for these investigations however, due to concerns about levee stability, excavations are not permitted within 20 feet (6 meters) of the toe of the protection levee. In addition, at no time will excavations be permitted to penetrate the theoretical slope of the protection levee. Both the theoretical slope and existing levee cross sections for stations located adjacent to the site are provided as Attachment 5. As discussed in Section 4.a. above, the Contractor is to provide full consideration of these restrictions when developing the research design and excavation plan.

The investigations may rely on a combination of excavation methods to determine the integrity, research potential, and possible project effects to the site. However, it is expected that 27 square meters, roughly .3% of total site area, will be excavated during site testing. Unit excavations will be conducted using standard archeological excavation and recordation procedures and will be in accordance with the approved research design and excavation plan. A back-hoe or similar mechanical equipment may be used for removing overburden at the site. Any re-allocation of the work effort must be coordinated with and approved by the COR. All excavations will be backfilled upon completion of site testing.

A map showing test units (including shovel tests auger tests and backhoe trenches, etc.), landscape features, site features, and site boundaries will be measured and mapped to scale. All field maps will accurately reference grid locations and levee traverse stations (x,y,z's) using Louisiana State Plane coordinates.

All areas investigated and resources identified within the project boundaries will be recorded (in ink) to scale on the aerial mosaic project maps and the appropriate 7.5 minute quadrangle. The quadrangle maps also will be used to illustrate site forms. Two copies of the updated Louisiana State site form showing the location and limits of the site, the location of test excavations, and resources identified will be returned to the COR upon completion of the fieldwork.

c. Phase 3: Analyses and Report Preparation. All data collected in conjunction with the cultural resources investigations will be analyzed using currently acceptable scientific methods. The Contractor shall catalog all artifacts, samples, specimens, photographs, drawings, etc., utilizing the format currently employed by the Louisiana State Archeologist. The catalog system will include site and provenience designations.

All literature, map search, field and laboratory data will be integrated to produce graphically illustrated, scientifically acceptable reports discussing the project as a whole. The contractor will synthesize the archeological, historical, and geological information obtained during Phase 1 with the results and observations made during Phase 2 to assess the significance, research potential, and potential for project impacts to the site. The Contractor will complete and file state site forms with the Office of the Louisiana State Archeologist and cite the resulting state-assigned site numbers or standing structure numbers in all draft and final reports of this investigation.

5. Reports

a. Research Design and Excavation Plan. Two copies of the research design and excavation plan will be prepared and submitted to the COR no later than three weeks after award. The report will summarize the completed work effort and make interpretations and recommendations for the placement of excavations. The report will serve as an interim guide for making management decisions.

b. Monthly Progress Reports. One copy of a brief and concise statement of progress shall be submitted with and for the same period as the monthly billing voucher throughout the duration of the delivery order. These reports, which may be in letter form,

should summarize all work performed, information gained, or problems encountered during the preceding month. A concise statement and graphic presentation of the Contractor's assessment of the monthly and cumulative percentage of total work completed by task shall be included each month. The monthly report should also note difficulties, if any, in meeting the contract schedule.

c. Draft and Final Reports. The draft and final reports shall include all data and documentation in accordance with the Secretary of Interior's Standards and Guidelines (Section 4 above).

Five copies of a draft report, integrating all phases of this investigation will be submitted to the COR for review and comment 19 weeks after delivery order award. The final report shall follow the format set forth in MIL-STD-847A with the following exceptions: (1) separate, soft, durable, wrap-around covers will be used instead of self covers; (2) page size shall be 8-1/2 x 11 inches with 1-inch margins; (3) the reference format of American Antiquity will be used. Spelling shall be in accordance with the U.S. Government Printing Office Style Manual dated January 1973. The final report cover will conform to the New Orleans District Cultural Resource Report Series standards and specifications.

The COR will provide all review comments to the Contractor within 7 weeks after receipt of the draft cultural resource reports. Upon receipt of the review comments on the draft report, the Contractor shall incorporate or resolve all comments and submit one preliminary copy of the final report to the COR within 3 weeks. Upon approval of the preliminary final report by the COR, the Contractor will submit one reproducible master copy, one copy on floppy diskette, 35 copies of the final report, and all separate appendices to the COR within 3 weeks (32 weeks after delivery order award). A copy of the Scope of Services shall be bound as an appendix with the final report.

6. Attachments

Attachment 1: Design Plans H-8-44735 showing Item M-181.1 to 175.4-L Marchand to Darrow Levee Enlargement and Concrete Slope Pavement Project (2 copies).

Attachment 2: Report entitled "Cultural Resources Survey of Two Ascension Parish Revetments, Mississippi River M-179.1 to 173". Prepared by Hinks et al. (1994).

Attachment 3: Auger Profile Records from Previous Investigations.

Attachment 4: Louisiana State Site Form for Darrow, 16AN54.

Attachment 5: Theoretical and Existing Levee Cross Section Records.

7. References

Hinks, Stephen, Paul V. Heinrich, Susan Barrett Smith, Julie McClay, Jennifer Cohen, and William P. Athens

1994 Cultural Resources Survey of Two Ascension Parish Revetments, Mississippi River M-179.1 to 173.0. Report No. COELMN/PD-94/13 submitted to the U.S. Army Corps of Engineers, New Orleans District.

Kelley, David B.

1989 Archeological and Historical Investigations of Four Proposed Revetment Areas Located Along the Mississippi River in Southeast Louisiana. Report No. COELMN/PD-88/12 submitted to the U.S. Army Corps of Engineers, New Orleans District.